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THE CORRELATES AND CONDITIONS OF MENTAL INERTIA

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"The chief enemy of active virtue," says Dr. G. Stanley Hall, "is not vice but laziness and apathy of the will. The law of least effort is universal. . . . We evade thought by creeds and real moral decisions by habits or at best by rules. The learning of even so-called scholars often seems to consist largely in knowing how, not to think, but to utilize the thinking of someone else as parasites live upon the food of their hosts. . . . It is hard to understand and so we commit. It is hard to investigate and so we compile. It is hard to observe and reason and so we accumulate protocol data. . . . That few realize the horror and even phobia of real work that rules in the depths of their own souls makes the matter worse rather than better."

Herbert Spencer says: "It really seems as if the aim of the great majority were to get through life with the least possible outlay of real thought."

Says Professor Titchener: "Man has dubbed himself *homo sapiens* and defined himself as a 'rational being' but he rarely thinks. Judging, thinking, is a process of rare occurrence. . . . There are so many past judgments on record in books and so many others to be had for the asking that independent thought is difficult."

"The statement, that all men think," says Wundt, "is a universally accepted fallacy. In truth very few men actually think. The great majority simply appropriate the thoughts or more often the thoughtless dictums of others."

Quotations similar to these might be added indefinitely. Philosophers since the time of Plato have recognized and deplored the mental inertia that has prevailed with the great

mass of mankind. But it is not necessary to quote authority to prove that it is the rare exception for people to think, observe and judge for themselves. Every politician knows the great importance that attaches to a " whirlwind " campaign on preëlection day. The sentiments of a whole state which have been quietly forming for months may be changed by a few fervid appeals to passion and prejudice. The work of a whole year's campaign of education may be brought to nought by a few days' campaign of bold harangue and sinister demagoguery. A quiet peaceful people may within a few hours be changed into a savage mob by the frenzied appeals of a fanatic. Thousands of workmen may be led out on a strike or sent back to work again by a few leaders of strong personality without even considering seriously what the results of their actions upon themselves may be. All because it is harder to think and form judgments for one's self than to accept the decisions of others ready formulated.

And it is not only among the so-called common and uneducated people that the absence of independent and original thinking prevails. Dependent or (if I may coin the term) " dictographic " modes of thought may be said to be the universal rule. Teachers know how common it is for college and university students to read through, and recite if called upon, two books of diametrically opposite views or theories without ever having the question raised in their minds as to the soundness of the principles which the books are supposed to set forth. Truth or fiction, fact or fallacy, if only it be cloth ed in smooth and easy flowing language is swallowed without question just as a patient swallows quinine or aspirin if only it is prescribed and coated with sugar or gelatine.

We all know how common it is to hear persons of all classes defending absurd theories and giving currency to fallacious reports and rumors upon no other authority than that they had read it some place, or that still more indefinite " *they* say so," when a very little real thinking or independent observation would convince that the rumors are without foundation and the theories are all hollow.

It has been my purpose in conducting the following study to see whether we may not devise some objective scale for determining the status and measuring the advancement (or regression) of school children in respect of those moral qualities of interest, attentiveness and self-reliance, and in the habits of independent observation and interpretation which distinguish the alert from the inert, the leaders from the led, the independent from the dependent.

Previous to the last decade of the nineteenth century the principal work of psychologists had been confined to inquiries

and investigations into typical mental functions, particularly those functions of perceiving and interpreting the external world. Very little effort or thought was given with a view to discovering the traits or characteristics which distinguish one individual from another. But beginning with the work of Galton in his "Inquiries into the Human Faculty and its Development," a very large and important, if not the most important part, of the work in psychology has been devoted to a study of the amount, causes and kinds of individual variations.

Omitting the larger class or group differences such as are incident to the influence of sex or race, the studies that have been made of individual variations may be grouped under five different headings: First, the advancement or retardation of school pupils as shown by their class standing and school averages. Second, various sensory and motor functions and sensory and motor defects. Third, various general mental functions such as attention, perceptual activities, retentiveness, reasoning ability and types of imagery. Fourth, anthropometric measurements of height, weight, cranial capacity and their correlations. Fifth, genetic differentiations into development stages, of which the so termed "Binet Tests" are the best examples.

While none of these studies may be said to have developed norms or standards of measurement which may be applied with the definiteness of mathematical formulae, yet their general reliability in measuring or determining the status of an individual is quite generlly if not almost universally conceded, and their great importance in the field of educational psychology is attested by the amount of thought and study which the leaders in this field are giving to them.

But when we come to the study of pupils in respect of those quasi moral and social traits which Royce terms "deliberate and intelligent habits," that is, "habits which get themselves embodied in and are the expression of ideas or of trains of ideas, of thoughts, of states of mind which favor interpretation and involve a knowledge of the environment," and to the study of the conditions which make for the development of these habits, we find ourselves in unexplored territory. We may say it is the function of the school to develop character and moral stamina, but we have no means of objectively determining their success in this work. Some persons may reply that these qualities of self-reliance and attentiveness and the habits of independent observation and interpretation are intangible qualities or attributes of soul and do not admit of objective analysis or measurement, and that they must be studied, if studied at all, as they get themselves expressed

in the daily life and actions of the individual. The great trouble with such a means of study is first, that it presupposes an intimate acquaintance with the persons studied, and second, that we gauge our anticipations and expectations of those with whom we frequently associate by what we have become accustomed to observe in them, and any change in their general moral and social character, if it be gradual as all growth must necessarily be, is accompanied by a corresponding change in our anticipations and expectations; just as a parent is unconscious of the rate of growth of his child except as it is determined by certain objective standards of weight and measure.

The importance of such a study as we have outlined, it seems all will readily admit. The first requisite in the treatment of any malady is a clear understanding of all its symptoms. And if we shall be able to determine the facts and features which condition mental inertia, and if we can find that these facts and features are sufficiently developed for objective study in the children of the common schools before they have finished their elementary education, and before those traits or characteristics which are to become life habits are fully crystallized into character, we have taken at least one step in the direction of the intelligent treatment of mental and moral dependence. It is not claimed for this study that it has determined anything at all final or that it has developed a scale for measuring mental inertia, but an examination of the results secured will, we believe, indicate the direction in which further research may with profit be carried on.

The general plan of the study or investigation was as follows: The following five pairs of questions or tests were prepared and submitted to the eighth grade pupils in the public schools of Madison, Wis., Marion, Ill., Wanatah, Ind., and Clarksburg, Fairmont, and Wheeling, W. Va., about 850 pupils in all, 418 boys and 432 girls.

I

Observe carefully two kinds of trees in your neighborhood, e. g., the Elm and Maple, and then write a description of them

Or

Study the description of these trees as given in the encyclopedias and other books that describe trees, and write from this description.

II

Write an essay describing General Lee's invasion of Pennsylvania in 1863

Or

Draw a map of eastern Pennsylvania marking carefully upon it the route pursued by General Lee in his invasion of the state.

III

Find out how much per pupil the salaries of the teachers in your school amount to for one year; also make a list of text books and supplies required for one eighth grade pupil and see which is larger and how much

Or

Solve the following problems:

a. Four men rented a pasture for 26 weeks. A put in 50 sheep and B 60 sheep for the entire time, C put in 70 sheep for 20 weeks and D 90 sheep for 22 weeks. They paid $130 rent, what was each man's share?

b. If it costs $80 to plow a field 40 rods wide and 80 rods long when we pay $5 a day for man and team, how much will it cost to plow a field 50 rods wide and 90 rods long if we pay $4 a day for man and team? He plows the same amount per day in both cases.

IV

Make a list of eight to ten principal articles of food consumed in your home and then find out from your grocer and provision dealer or from others if you can where each is produced and prepared for market

Or

Write a composition describing the products and industries of Oklahoma.

V

Commit the following poem:

There is a story I have heard
A poet learned it from a bird,
And kept its music every word.

A story of a deep ravine,
O'er which the towering treetops lean,
With one blue rift of sky between.

And there two thousand years ago,
A little flower as white as snow
Swayed in the breezes to and fro.

Day after day, with longing eye,
The floweret watched the narrow sky,
And fleecy clouds that floated by.

And through the darkness, night by night,
One gleaming star would climb the height,
And cheer the lonely floweret's sight.

Thus watching the blue heavens afar,
And the rising of its favorite star
A slow change came—but not to mar.

For softly o'er its petals white
There crept a blueness, like the light
Of stars upon a summer night;

And in its chalice, I am told,
The bonny bell was formed to hold
A little star that gleamed like gold.

Now, little people, sweet and true
I find a lesson here for you
Writ in the floweret's bell of blue.

The patient child whose watchful eye
Strives after all things pure and high,
Shall take their image by and by.

Or

Write in your own words the story told in the poem. Pick out and find the definitions of all words you do not know before you write.

In order to secure uniformity in conducting the tests the following instructions were given to each teacher where the tests were given.

In order that the data secured from these tests may have the greatest value, it is necessary that the conditions under which they are given be uniform. You will, therefore, kindly follow these instructions very closely:

1. Detach the first pair of questions (those pertaining to Lee's invasion) and give one pair to each Eighth Grade pupil on the first Tuesday morning possible, after receiving the questions. Give the second pair on the second Tuesday, the third on the next, etc., till all five pairs have been given.

In no case shall pupils know the nature of any pair of questions before they are given out nor shall any special instruction or lesson be given as a preparation for them.

During the week when question No. 3 is being considered the teacher will please to provide the school directory for 1910-11 as reference for those who choose the first of the pair.

2. Make it clear to each pupil that he is to take but one from each pair of questions and that he must select for himself regardless of what any one else does.

(The absolute free choice of each pupil is the most important feature of these tests.)

3. Urge the pupils to hand in the work as soon as convenient. Give no one longer than till Friday evening to hand in Tuesday's assignment, four days being the maximum time for one question. If for any reason a pupil fails to report on one of these assignments, please include with that set of manuscripts the name of pupil and the reason, whether sickness, absence, etc.

4. The pupils should date the manuscripts the Tuesday morning when the pair of questions is given out, and the teacher will without fail write on the outside of each manuscript the exact date and A. M. or P. M. when it is handed in by the pupil. This will indicate the amount of time between the assignment and its completion by each individual pupil. The teacher will insist upon the pupils' doing their best but will accept the first manuscript presented, permitting no pupil to have his paper back for revision.

5. In the case of question No. 5 make a list of those who choose to commit the poem, and opposite each name write the date and A. M. or P. M. when pupil can recite it. Those who choose to write the story will prepare manuscripts as with the former questions.

6. Should any pupil use more than one sheet of paper in a single manuscript, fold them securely and tie the manuscripts of each assignment, that they may not become miscellaneously mixed.

At the end of the fifth week after all tests have been taken, the Superintendent will please express all manuscripts to me at my expense.

7. Should any part of these instructions not be entirely clear, please let me know, and defer giving the tests till all ambiguity is explained.

I wish it well understood that these tests are not intended to measure the merit of school systems nor the efficiency of teachers, nor yet the advancement of pupils; but simply to discover some inherent tendencies of pupils and their correlates which I believe to characterize children regardless of location or school advantages. Should any superintendent or teacher, assisting me in these tests, desire the results of this investigation I shall gladly furnish them to him.

For certain reasons test III was omitted in a part of the schools, and in others special assistance had to be given by the teachers thus defeating the primary purpose of the tests, viz., the free uninfluenced choice of each pupil. For this reason the results of this test are not considered with the other data, and the results given will be only those secured from tests I, II, IV and V. As will be seen by referring to the questions, the first question of test II and the second of tests I and IV call for a purely mnemonic or "text book" answer. The others demand something of original observation, investigation or constructive thinking. The choice in test V is between interpretation and simple memorizing. The purpose was to discover whether or not the tendency to originality and initiative, or the opposite, as evidenced by the pupils' choice in one test would obtain in the others. Also to see whether originality is correlated with interpretation or with memorizing.

After the tests had been completed and the manuscripts collected, a list of all pupils reporting was made out, and opposite each name was indicated the type of question he had answered in each case and also the time that had elapsed between his receiving the questions and submitting his answer. Answers to the first question of tests I and IV and the second of II and V are designated "A." The others are designated "B."

Six hundred eighty-five pupils took at least three of the tests. A summary of results is given in the following tables:

TABLE I

Distribution of Answers in the Different Tests

	Test I		Test II		Test IV		Test V	
	No.	%	No.	%	No.	%	No.	%
"A"	101	14.7	138	20.1	215	31.4	273	40.
"B"	567	82.8	534	78.	452	66.	385	56.1
Absent	17	2.5	13	1.9	18	2.6	29	3.9

TABLE II

Frequency of Combinations in Modes of Procedure[1]

	No.	%
"A" in all tests.	51	7.4
"A" in 3, "B" in 1.	55	8.
"A" in 2, "B" in 2.	102	14.8
"A" in 1, "B" in 3.	156	22.7
"B" in all tests.	321	47.1

TABLE III

Frequency of Combinations in Tests I and II

	No.	%
"A" in both tests.	61	8.9
"A" in I, "B" in II.	37	5.4
"B" in I, "A" in II.	77	11.3
"B" in both tests.	480	70.
Absent in I or II.	30	4.4

TABLE IV

Frequency of Combinations in Tests I and IV

	No.	%
"A" in both tests.	78	11.4
"A" in I, "B" in IV.	19	2.8
"B" in I, "A" in IV.	135	19.7
"B" in both tests.	418	60.
Absent in I or IV.	35	5.1

TABLE V

Frequency of Combinations in Tests I and V

	No.	%
"A" in both tests.	80	11.7
"A" in I, "B" in V.	17	2.2
"B" in I, "A" in V.	190	27.7
"B" in both tests.	362	52.8
Absent in I or V.	36	5.5

[1] In Table II all absent pupils except those who had answered three of the "A" type of question are grouped with those whose answers are of the "B" type.

TABLE VI

Frequency of Combinations in Tests II and IV

	No.	%
"A" in both tests.	94	13.7
"A" in II, "B" in IV.	40	5.8
"B" in II, "A" in IV.	116	17.
"B" in both tests.	404	59.
Absent in II or IV.	31	4.5

TABLE VII

Frequency of Combinations in Tests II and V

	No.	%
"A" in both tests.	100	14.6
"A" in II, "B" in V.	32	4.6
"B" in II, "A" in V.	164	23.9
"B" in both tests.	347	50.9
Absent in II or V.	42	6.

TABLE VIII

Frequency of Combinations in Tests IV and V

	No.	%
"A" in both tests.	141	20.6
"A" in IV, "B" in V.	65	9.3
"B" in IV, "A" in V.	126	18.
"B" in both tests.	306	44.6
Absent in IV or V.	47	7.4

Table I gives the frequency with which each of the two modes of procedure, "A" and "B," are met with in each of the several tests. The percentages are not equal in the four tests, showing that they are not of equal difficulty, or do not require the same initiative. The original type of question in tests IV and V should be made more difficult to make them objectively comparable to those of tests I and II. These seem to be fairly comparable.

Table II shows the number of pupils who chose the same type of question in all the tests, and also the number who shifted from one type to another. Notwithstanding the inequality in the difficulty of the questions the results show quite conclusively that the type of mind displayed under one condition is likely to obtain in another. 54.5% of the pupils answered the same type of question throughout, while only 45.5% made any change, and only 14.8% divided their answers equally between the two. By comparing single tests one with another we find that those who maintain the same mode of

procedure outnumber the others in varying proportions, from 2 to 1 to nearly 4 to 1.

Another evidence of the persistence of type or mode of procedure which is not brought out in the tables is found by taking those whose answers are "A" in test I (the test in which the fewest "A's" occur) and following them through the other tests. Of the 101 whose answers were "A" in test I, 51 or slightly over half had all their answers in "A;" 23 had two other answers in "A;" 22 one other answer in "A," while only five had all their other answers in "B."

By taking the "B's" in test V, in which the fewest "B's" occur, and following them through in the same way we get the following results: of the 385 pupils answering "B" in test V, 321 answered "B" in all other tests, 50 answered "B" in two other tests, 21 answered "B" in one other test, while but two answered no other "B."

Two methods were used to determine the relative alertness or inertia of the different groups of pupils. First, the average time taken by the different groups of pupils to submit their answers after receiving the questions. In a number of cases the teacher failed to mark the time on the manuscripts, but the average time for those of all the groups whose time was given was as follows:

"A" in all tests.	1.75	days
"A" in 3, "B" in 1.	1.82	"
"A" in 2, "B" in 2.	2.57	"
"A" in 1, "B" in 3.	3.07	"
"B" in all tests.	2.95	"

The second method was by means of the following questionnaire together with representative pupils from the different groups sent to the teachers where the tests had been conducted.

To the Principals and Teachers whose Pupils have taken our Eighth Grade Tests:

Will you kindly answer the following questions concerning the class standing and general school attitude of the enclosed list of pupils.

I wish to make a comparison of your estimate of these pupils as determined by your year's work with them with my own purely objective grouping as determined by their choosing among the several pairs of questions embodied in the tests.

The lists include representatives of all the various types of pupils but only a sufficient number are taken to represent the different classes or groups.

As indicated in the instructions for conducting these tests, this is an entirely impersonal study; and in interpreting my data no comparison will be made between different pupils or schools. My aim is to determine traits or characteristics of different types of pupils.

The different traits or qualities to be considered are placed under nine headings, as follows:

First. Class standing: What is the pupil's class standing as shown by his recitation and examination grades?

Second. Promptness: Is the pupil usually up with his work? Does he respond promptly to questions and assignments?

Third. Attentiveness: Does the pupil give sufficiently close attention to the ordinary assignments and instructions to follow them out without frequent corrections and suggestions?

Fourth. Interest: Has the pupil a real lively interest in his school work, or does he "just work against time," content to keep roughly inside of requirements?

Fifth. Self-reliance: Does the pupil rely on his own efforts or on the help he may get from others in preparing his school work?

Sixth. Qualities of Initiative and Leadership: Does the pupil show any qualities of initiative and leadership in his relations with other pupils?

Seventh. Interest and Ability in Manual Accomplishments: Has the pupil any interest or ability in manual accomplishments such as drawing, modeling or designing, or in handicraft work as in the making of cabinets, kites, etc.?

Eighth. Emulation: Has the pupil a strongly developed spirit of emulation or rivalry?

Ninth. Interest and Enthusiasm in Games and Play: Does the pupil play with a real zest and enthusiasm?

Each pupil should be graded with respect to each of the nine different qualities or traits. Those who rank highest will be marked (E) excellent. The next in rank (G) good. The third in rank (F) fair, and those who rank lowest will be marked (P) poor.

Make the markings under each heading independent of those under every other heading.

To record your grading simply place the appropriate letter (E), (G), (F) or (P) opposite the pupil's name and in the column headed with the particular trait in which the pupil is being graded.

Grades or marks of 247 pupils,[1] chosen at random from the whole list, were received, giving a total of 2,223 marks distributed as follows: E, 672; G, 620; F, 584; P, 347. The following table shows the distribution of marks for the different groups of pupils, also the average number of different marks for each popil of the several groups.

No. of pupils	Type of answers	E's		G's		F's		P's	
		Total	Av.	Total	Av.	Total	Av.	Total	Av.
32	"A" in all tests.....	189	5.91	50	1.56	29	.91	20	.62
45	"A" in 3, "B" in 1..	194	4.31	118	2.6	79	1.76	14	.33
31	"A" in 2, "B" in 2..	68	2.19	83	2.68	85	2.74	43	1.39
34	"A" in 1, "B" in 3..	53	1.56	89	1.62	104	3.05	60	1.76
105	"B" in all tests.....	169	1.61	280	2.66	281	2.67	215	2.05

[1] One school of 47 pupils failed to return the grade list in response to the questionnaire.

If we combine groups one and two, that is, those who had three or more "A's" in all the tests and compare their marks with the other three groups we get the following table.

No. of pupils	Type of answers	E's		G's		F's		P's	
		Total	Av.	Total	Av.	Total	Av.	Total	Av.
77	"A" in 3 or more tests	383	4.97	168	2.18	108	1.40	34	.45
170	"B" in 2 or more tests	290	1.70	452	2.66	470	2.76	318	1.87

These tables show quite conclusively that the pupils with the greatest tendency to independence and originality stand much higher in class work and general school attitude than those of a dependent or mnemonic type of mind. The latter group in the last table received an average distribution of the marks E, G, F and P, while in the former group the marks E and G outnumber the marks F and P more than three to one, showing that the average pupil is dependent on books or other authority, while the exceptional pupil possesses a distinct bent toward originality.

Both the teachers' estimates of the pupils and the relative time taken for answering the questions show quite conclusively that independent observation and interpretation are distinctly the correlate of mental alertness, while their opposites, viz., dependence and a tendency to get everything second hand, are distinctive characteristics of mental inertia.

An interesting fact of sex difference, although not germane to the main text of this thesis, was brought out in a study of the data. It is found that the boys predominate very largely in those groups who answered the same type of question in all the tests, while the girls were in the majority in the groups that answered a part of one type and a part of the other. Sex variation is shown in the following table:

	Boys	Girls
"A" in all tests	37	14
"A" in 3, "B" in 1	25	30
"A" in 2, "B" in 2	49	53
"A" in 1, "B" in 3	50	108
"B" in all tests	177	144

Whether this should be regarded as a fundamental sex difference, or whether the greater tendency on the part of the

girls to shift from one type of question may not be due to a greater variability in temperament at the age of eighth grade pupils, i. e., about 14 years, I do not attempt to answer. The fact is stated for what it is worth and may be interpreted according to the reader's observation and experience.

The following general conclusions seem to be warranted by the facts as brought out in the foregoing study:

First, that independence and originality in observation and interpretation may be objectively measured.

Second, that initiative and independence in one situation or condition are an indication that the same traits will obtain in another, and that this "persistence of type" is more pronounced in boys than in girls.

Third, that independence in modes of thought is rather highly correlated with promptness in performing school tasks and also with high rank in school abilities and general school attitude. In other words, that initiative and originality and the habits of observation and interpretation may be objectively determined, and that the absence of these traits and habits marks the conditions of mental inertia.

A PRELIMINARY STUDY OF THE READING TASTES OF HIGH SCHOOL PUPILS

By Mrs. Roxanna E. Anderson, The State University of Iowa, Iowa City

By far the most important object in teaching literature is to open its vast field to the pupils' interest; to get them really to like to read good books. Teachers have before them the task of turning pupils from reading that is trivial and harmful to an interest in books which are worthy and of permanent value. President Eliot wrote: "The schooling which does not result in implanting a permanent taste for good reading has failed in the main end of democratic education."[1]

We need to know as much as possible about the original interests of pupils in reading; we must share these and introduce them to better things step by step. For this knowledge of the reading tastes of pupils we cannot rely on thoughts or estimates, we must have facts.

The question to quite an extent has been investigated for the intermediate and grammar grades; but concerning the tastes of secondary school pupils, very little has been worked out.

Much has been suggested and written regarding what high school pupils ought to read; many lists of books proposed containing those that they ought to like to read; but the purpose of this investigation is to find out what they do actually read, how much, what they like best, and so forth.

The material for this study was gathered from answers to a questionnaire sent to the high schools of Iowa City and Fort Dodge, Iowa. The returns included papers from 588 high school pupils from the four grades, distributed as follows: freshman 218, sophomore 158, junior 107, senior 105.

As an aid to the understanding of the data analyzed the questionnaire is here inserted. The order of discussion will follow that of the questions.

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[1] Addresses and Proceedings of the National Education Association, 1903, p. 966.

Questionnaire

I. (a) About how many books, not required, do you read each month? (b) Do you draw these books from the school library, the public library, or do you have them at home?

II. How many short stories or other magazine articles do you read each week?

III. Underline the kinds of reading that you like: travel, great men, great women, adventure, love stories, ghost stories, detective stories, war stories, how to make things, science.

IV. Which books for outside reading do you like best? In each case state why.

V. Which one of all the books you have ever read do you like the best? Why? Is it on the required list for outside reading?

VI. Do you like poetry? Favorite poem?

VII. What magazines and papers do you read? Underline the ones that are taken in your family.

VIII. Who helps you in the choice of books and stories that you read outside of school work?

IX. Do you talk over with any one the reading that you do? If so, with whom?

X. Name two or three characters that you have read about, in history, literature, or elsewhere, which you would wish to be like.

XI. What books, not text books, do you possess as your own?

XII. Name five books that you are glad to own or would like to own.

XIII. Name some books or selections that are required for English that you do not enjoy. Why?

XIV. Name three books that you would like to have included in the course of study for outside reading.

I. Amount of Reading Done by High School Pupils

Answers to the following questions furnish data for the consideration of the amount of reading done by high school pupils:

About how many books, not required, do you read each month? Do you draw these books from the public library, the school library, or do you have them at home?

How many short stories or other magazine articles do you read each week?

The tables following give an analysis of the answers, combining the results of the two schools.

TABLE SHOWING AMOUNT OF READING DONE BY PUPILS

BOOKS

Grades	Freshman		Sophomore		Junior		Senior	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Total answers	92	122	71	79	45	58	53	50
Total per month	225	351	164	209	55	147	117	92
Average per month	2.7	2.9	2.3	2.7	1.3	3.7	2.4	2
Highest number per month	10	10	8	10	6	8	12	5
Per cent of pupils reading no books	13	4	10	4	27	7	4	4
Per cent of pupils reading av. no. of books or more	42	45	38	39	42	39	41	46

SHORT STORIES OR MAGAZINE ARTICLES

Grades	Freshman		Sophomore		Junior		Senior	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Total per week	600	677	331	341	191	327	329	186
Average per week	6.5	5.4	4.8	4.4	4.8	6.6	7.1	5
Highest number per week	25	20	20	25	20	20	25	15
Per cent of pupils reading none	4	5	1	3	2	3	2	4
Per cent of pupils reading av. amount or more	40	41	38	48	46	33	34	28

We find that the boys of the freshman class read an average of 2.7 books per month; this average falls to 2.3 for sophomores; to 1.3 for juniors; and rises to 2.4 for seniors. 12 is the greatest number of books read per month for the four grades, while the average is 2.3. 14% of the boys read no books, while about 41% read as many as the average number or more.

In the case of short stories or magazine articles, the freshman boys read an average of 6.5 per week; this average

decreases, as did that for books to 4.8 for sophomores; remains the same for juniors; and rises again to 7.1 for seniors; 25 is the greatest number read per week and this number is the same for freshman and senior boys. 22 is the average number read. 2.5% of the boys read no stories or magazine articles, but about 40% read as many as the average number or more.

In the record of reading done by the girls we note an average of the number of books per month slightly higher than that shown in the case of the boys. An average of 5% of the girls read no books as compared with 14% in the case of the boys. About 42% of the girls read as many as the average number of books per month, while the per cent for the boys is 41.

In the short story or magazine reading the boys read 2 more per week than the girls. 4% of the girls as compared with 2.5% of the boys read no short stories or magazine articles. 38% of the girls read as many as the average number per week, while in the case of the boys the per cent is 40.

Comparing the average amount of all reading done by boys with that done by girls we find practically very little difference. In the case of books the average is slightly higher for girls while just the reverse of this is true in the case of short stories or magazine articles. Taking into account, however, all factors we find that girls read more than boys. This fact is borne out by other studies though in most cases the difference is much more strongly marked.

Some of the answers given by pupils to these questions are very significant though they cannot be tabulated. Some say that they read little during school months but a very great deal during vacation. A few answer that they do not know just how many books per month or stories per week they do read. Others say that they read everything that they can get hold of. In the case of negative answers, a number say that their school work takes all of their time and they are unable to do outside reading. Some like stories and magazine articles better than books and report reading all of several different ones.

The second part of the question has reference to the sources of books read. These are the public library, the school library, the home, and borrowing. The following table shows in percentages the use of the principal sources of reading material made by high school pupils.

TABLE SHOWING IN PERCENTAGES THE USE OF PUBLIC, SCHOOL, AND HOME LIBRARIES

Grades	Public Library		School Library		Home Library	
	Boys	Girls	Boys	Girls	Boys	Girls
Freshman	59	76	3	6	45	63
Sophomore	67	64	6	4	46	64
Junior	46	67	13	3	56	72
Senior	64	70	9	12	62	72

The table indicates very good use made of the public library by the boys. The sophomores lead in its use with 67%, the seniors follow with 64%, next come the freshmen with 59%, and last the juniors with only 46%. While the juniors make least use of the public library they lead in the use of the school library, though the per cent here is not nearly as large as it should be. 62% of the senior boys report reading books found in home libraries.

In nearly every case the girls exceed the boys in the use of all libraries. 76% of the freshman girls use the public library as compared with 59% for freshman boys. The difference is even greater in the case of juniors. The senior girls lead in the use of the school library though the per cent of those using it is only 12. 72% of both junior and senior girls report getting books at home. This per cent seems exceptionally high.

8% of the boys and 5% of the girls report borrowing books from friends.

The showing for the use of the public library is not discouraging. 59% of the boys and 69% of the girls report it as one of the sources of their reading. The average per cent of boys using the school library is only 8, and for girls it is but 6. Now when the "Laboratory method" is extended to nearly all branches of study, we can hardly understand so little use being made of the high school library. To some extent teachers should work with pupils in the library.

A library in a high school is the place where lessons taught in class are driven home; where all that is hinted at in lessons can be enlarged upon; where the desire for further knowledge can be satisfied. Educators all over the country are awake to the possibilities of this kind of work.

II. Nature and Kind of Reading

Next in consideration comes the nature and kind of reading done by high school pupils. Ten representative classes of stories are included in the question which follows.

Underline the kinds of stories that you like: travel, great men, great women, adventure, love stories, ghost stories, detective stories, war stories, how to make things, science.

The following table gives in percentages the preferences of pupils for the different classes of stories.

Table Showing in Percentages the Preference of Pupils for Ten Classes of Stories

Grades	Freshman		Sophomore		Junior		Senior	
	B.	G.	B.	G.	B.	G.	B.	G.
Stories of travel	36	46	31	45	35	44	29	47
Stories of great men	24	31	19	27	24	14	36	33
Stories of great women	4	46	3	38	4	33	9	47
Stories of adventure	90	75	89	75	76	67	84	53
Love stories	36	73	50	82	45	87	63	86
Ghost stories	28	47	27	32	24	41	16	24
Detective stories	74	53	77	45	65	55	63	26
War stories	70	41	59	32	45	27	45	20
How to make things	33	23	40	18	41	11	22	24
Stories about science	14	12	20	8	45	9	53	12

While the summary of answers given in the table is not a final test of the values of the different classes of stories, it is at least suggestive of their relative popularity. The taste of the boys differs somewhat from that of the girls, so we will consider them separately.

Stories of adventure are most popular with boys. The maximum is reached in the ninth grade though the liking remains well marked throughout the high school years. Detective and war stories also are popular in the freshman year but they both gradually lose their charm during succeeding years. The preference for biography is greatest among seniors and, true to their sex, the boys prefer the stories of great

men to those of great women. Only 36% of the freshman boys express a liking for love stories though this per cent gradually increases toward the senior year.

Stories of adventure are rather popular with girls also, though we note a steady decrease in the liking. Girls have large preference for biographies of great women, though they care more for stories about great men than boys do for those about great women. It seems a pity that the biographies of so few of the world's great women are written. Such a work as the Life of Alice Freeman Palmer by her husband proves not only interesting but serves as a wholesome example of true and beautiful womanhood. The girls' largest preference is for love stories as the boys' is for stories of adventure.

Reference to the table impresses us with the fact that 85% of the boys prefer stories of adventure, and 82% of the girls express a preference for love stories. Since these preferences are so large and well marked throughout the high school course, we can infer that these are the kinds of stories that they are going to read. The duty then of parents, teachers, and librarians is to see that they get the best stories of adventure and love, pure and true to life instead of some poor substitutes or false and vicious misrepresentations.

Other statistical studies bear out these same differences in taste for the different kinds of reading. So spontaneous and universal are they that we consider them among the most important and interesting revelations of how diversely the natures of the two sexes develop. These differences should be always duly recognized and respected.

The next questions are in reference to particular books liked best by pupils. The two are so closely related that they will be discussed together.

Which books for outside reading do you like best? In each case state why.

Which one of all the books you have ever read do you like best? Why? Is it on the required list for outside reading?

The following list includes the books reported as first choice by both boys and girls. All books receiving more than one vote are included.

List of Books Liked Best:—In the following lists the first numbers indicate the boys, the second the girls. Hans Brinker, Dodge, 3-11; Treasure Island, Stevenson, 81-28; Little Shepherd of Kingdom Come, Fox, 8-11; Ivanhoe, Scott, 19-27; Shepherd of the Hills, Wright, 8-12; David Copperfield, Dickens, 9-37; Mill on the Floss, Eliot, 5-30; Lorna Doone, Blackmore, 15-13; Hoosier Schoolmaster, Eggleston,

6-10; Call of the Wild, London, 34-6; The Crisis, Churchill, 6-12; Huckleberry Finn, Clemens, 7-0; Tom Sawyer, Clemens, 5-0; Man Without a Country, Hale, 7-0; Bob Son of Battle, Ollivant, 5-0; Jungle Books, Kipling, 6-0; Being a Boy, Warner, 4-0; The Virginian, Wister, 4-0; Last of the Mohicans, Cooper, 8-0; The Spy, Cooper, 5-9; Ben Hur, Wallace, 5-0; The Sea Wolfe, London, 5-0; The Sky Pilot, Connor, 17-12; Motor Boys Series, Young, 9-0; Alger Books, 3-0; Mrs. Wiggs of the Cabbage Patch, Rice, 0-25; Rebecca of Sunny Brook Farm, Wiggins, 0-16; Miss Alcott's Books, 0-26; Ramona, Jackson, 0-20; Kentucky Cardinal, Allen, 0-6; Gentleman from Indiana, Tarkington, 0-5; Lovey Mary, Rice, 0-5; Girl of the Limberlost, Stratton-Porter, 0-7; Anne of Green Gables, Montgomery, 0-9; Elsie Books, 0-3; Uncle Tom's Cabin, Stowe, 0-5.

This list shows again the prevailing love of adventure on the part of the boys and of sentiment on the part of the girls. Treasure Island, Call of the Wild, Ivanhoe, Lorna Doone, Last of the Mohicans, are very popular with the boys, while David Copperfield, Mrs. Wiggs of the Cabbath Patch, Mill on the Floss, Little Women, Anne of Green Gables, Rebecca of Sunny Brook Farm, and Ramona are more often preferred by girls.

The tastes of boys and girls are not irreconcilable for they seem to have a common meeting ground in books that are rich in both sentiment and incident.

There is a noticeable change of taste in both boys and girls with increasing age. Books liked best by freshman and sophomore boys but nearly if not entirely disappearing from the list before the senior year are Lorna Doone, Motor Boys, Alger Books, Hans Brinker, and Treasure Island. Such books as Ivanhoe, Call of the Wild, Shepherd of the Hills, A Man Without a Country, and David Copperfield appear more frequently in the junior and senior papers.

The books named by freshman and sophomore girls but dropped from the list are Hans Brinker, The Spy, Mrs. Wiggs of the Cabbage Patch, Elsie Books, Treasure Island, and Uncle Tom's Cabin. The books appearing in the junior and senior years are Ramona, Anne of Green Gables, Ivanhoe, David Copperfield, and Shepherd of the Hills. Girls remain faithful to Miss Alcott throughout the high school years.

Many of the answers giving reasons for choice are rather indefinite; as, "I like nearly everything that I read," or "I have no choice of books," or "I like a certain book best because it is nice and interesting." The following are lists of reasons for particular choice given by boys and girls. The names of all books are omitted.

Freshman Boys: Because it is exciting, is full of adventure, tells of backwoods fighting and pioneer life, has a good plot, is a story with action, gives definite data on camp outfits, tells of the life of a great man, is scary and very exciting, tells about wars and Indians, is about outdoor life, tells about the pluck of boys, is thrilling and tells about pirates, gives something practical, because of the humor of it, it is a good football story.

Senior Boys: Because it deals with people like we meet in life, description is good, the interest is kept up throughout, has a good plot, describes nature, is full of experience, gives good advice, the characters are natural, gives a touch of romance, gives information, the characters are well pictured.

Freshman Girls: Because the author uses such perfect English and has ideas resembling mine, it is interesting and lively, I like the characters, is about girls, is amusing, appeals to me, is about children, tells about things that happen at home, has a secret in it, is easy to read and understand, it teaches a lesson, is sad and interesting, is interesting and turns out nice.

Senior Girls: Because the author makes us feel the situation, it is a true story and the characters are real, has a mystery running through it, the plot is good and is well developed, has a good historical setting, characters are real and noble, is instructive and has good moral effect, is cheerful and helpful, is pathetic, has a good love plot, the love story is true.

These reasons also bring out the characteristic tastes of boys and girls. The boys like best books that are exciting, stories of adventure, books full of action and outdoor life. The girls read for beauty and sentiment, to have their feelings stirred, stories of children, books picturing home scenes, and so forth. They care for refinement and style in books that they read.

The answers too, show some development in taste. The most common reason for choice among freshman and sophomore boys is "because the book is exciting" or "because it is full of adventure," while among the juniors and seniors we find reasons that show signs of more mature thought and judgment. The same difference is to be noted in the reasons for choice among the girls.

While the lists for outside reading provided in the course of study meet the demands of the majority, there are many still not provided for. About 57% of the pupils name as first choice books from the required list.

It is a fact regretfully admitted by most English teachers that many of their pupils do not read after graduation much

literature of the kind that makes up the course of study. The tastes of boys and girls should be respected in part in forming courses of study. We must begin at least with what is naturally interesting to pupils and lead them to higher grades of literature so gradually that they are always interested.

Since poetry forms a necessary part of the reading of pupils of high school age we included the following question:

Do you like poetry? Favorite poem?

A summary of the answers to the first part of the question is presented in the table which follows.

TABLE SHOWING LIKING FOR POETRY

Grades.....	Freshman		Sophomore		Junior		Senior		Total	
	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Total answers.....	92	127	74	85	46	60	55	50	267	322
"Yes".....	27	69	23	61	14	32	21	31	85	193
"No".....	41	25	33	15	18	11	15	10	111	61
"Somewhat".....	24	33	18	9	14	17	19	9	75	68

In all cases the girls lead in the liking for poetry. 60% of the girls as compared with 31% of the boys express a decided liking for it. In addition, the table gives a large number of both boys and girls who express "somewhat" of a liking for poetry.

In the study made by Susan Frances Chase[1] those (including both boys and girls) who reported a natural love for poetry were not in the majority. This was quite different from the returns of the study made by Lancaster,[2] where poetry ranked almost equal with the novel in popularity. Studies along this line show varying results owing to differences in education and the literature taught in the schools. Certainly the present generation ought to show an increasing love for poetry. The present study shows a tendency along this line. In general, the interest in verse begins in early childhood with the rhyme and passes over gradually into sentiment and thought in adolescence. Real poetry receives little recognition before the adolescent period.

[1] Child Study Monthly, Vol. VI., pp. 322-328.
[2] Ped. Sem., Vol. V., pp. 61-128.

The choice of poems as favorites falls upon 78 different ones. The following table gives the distribution of choice for all poems receiving more than one vote by either boys or girls.

TABLE INDICATING FAVORITE POEM

Grades	Freshman		Sophomore		Junior		Senior		Total	
	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.
Evangeline	6	24	7	18	..	14	5	17	18	73
Lady of the Lake	6	13	9	9	4	10	2	3	21	35
Enoch Arden	6	7	..	..	..	..	..	..	6	7
Courtship of Miles Standish	3	2	3	4	..	..	..	..	6	6
Snow-bound	2	6	4	8	5	2	..	..	11	16
Vision of Sir Launfal	..	7	..	5	4	..	..	3	4	15
Hiawatha	..	..	2	3	..	..	..	8	2	11
The Raven	..	..	3	..	..	2	5	..	8	2
Village Blacksmith	..	3	..	..	3	..	..	..	3	3
Children's Hour	..	2	..	3	..	..	..	..	..	5
Thanatopsis	..	..	..	2	3	2	4	4	7	8
The Bells	..	..	..	..	4	..	3	2	7	2
Death of the Flowers	..	..	..	..	..	3	..	..	..	3
To a Water Fowl	..	..	..	..	..	..	2	..	2	..

There is not generally as marked a difference between the choice of boys and girls as one might expect, though their choice does show some degree of difference in taste.

For the freshman boys Evangeline, Lady of the Lake, and Enoch Arden lead in the list and receive an equal number of votes; with the sophomore boys Lady of the Lake is most popular; with the junior boys Snow-bound heads the list; while with the senior boys The Raven receives most votes. In the case of the girls Evangeline is decidedly the first choice of every class.

Since so large a portion of the time devoted to reading by high school pupils is given to periodicals, we asked the question: What magazines and papers do you read? Underline the ones that are taken in your family.

The answers to this question show a little more than 1% who read no magazines or papers. 22% report no magazines or papers taken in the family. The average number taken in the family is 3, while the average number read is 5.

With the boys *Popular Mechanics* and *The Saturday Evening Post* are equally popular throughout the four high school years. The *Youth's Companion* and *American Boy* are most popular with freshman and sophomore boys, while *Everybody's, McClure's,* and *The Cosmopolitan* prevail with juniors and seniors.

As with books so with magazines and papers, the girls distribute their reading over a greater range than boys do. The magazines most popular with girls are here named in their order of preference: *Ladies' Home Journal, Youth's Companion, Saturday Evening Post, Woman's Home Companion, Everybody's, Cosmopolitan,* and *McClure's.*

The better and heavier types of magazines—*Review of Reviews, Century, Scientific American, Literary Digest,* and so forth, are named less frequently by both boys and girls, and are taken in comparatively few homes.

The lists of periodicals taken in the family give evidence that some attention and direction is needed along this line. An inferior class of daily papers and light story magazines are too often the only ones mentioned as taken. A carefully selected list of standard newspapers and magazines is the exception.

III. Help and Direction in Choice of Reading

To the question, Who helps you in the choice of books and stories that you read? the answers "I read what I please," "Nobody helps me," "I choose my own books and stories," and so forth, are suggestive of needed attention along this line.

Boys rely less upon the recommendations of others in their reading than girls do. Only 26% of the boys as compared with 56% of the girls report receiving help in the choice of their reading. Boys seem to exercise greater independence and individuality in their choice while girls like to read what others read and advise them to read.

Naming the sources of recommendation in the order in which the results indicate, parents take first place, then follow in their order friends, librarians, teachers, brothers and sisters.

A large per cent of both boys and girls receive no help at all in the selection of their reading. While it is true that pupils should have great freedom in all reading done outside of school, it is necessary that some direction and suggestion be given. Next after parents the teacher should come naturally as the one to give such help. Teachers need to keep very near the pupils and their interests in order to do the most efficient work.

Another question closely connected with the previous one is: Do you talk over with any one the reading that you do? If so, with whom?

The answers to this question give results quite different from the one considering the help that pupils receive in choosing their reading. 64% of the boys and 90% of the girls talk over with some one the reading that they do. The answers to the question with whom? fall into four groups. Naming them in the order indicated by the results, they are friends, parents, other relatives, and teachers. The group friends has much the largest per cent, larger than all the others together, while that of teachers has only 6% of both boys and girls. These facts emphasize the importance of proper friendships among high school pupils, and the necessity for closer association and friendship between teachers and pupils.

The attitude of both parents and teachers toward adolescent boys and girls should be one of interest and confidence. Encouragement in the discussion of books and stories read will promote frankness and confidence on the part of high school pupils. We should not appear too shocked or irritated by what the young people are reading. In such case they conceal the truth about it and we cannot discover their untrained tastes. Opportunity to lead them to a higher and better grade of literature is lost. The pupils must be taken where they are and led gradually to the enjoyment of things really worth while.

IV. Characters Chosen as Ideals

There are few if any influences which exert greater power over young people than the ideals they hold. Most studies point to the fact that they are very largely formed from reading. Because of this tendency the following question was included in the questionnaire.

Name two or three characters that you have read about, in history, literature or elsewhere, which you would wish to be like.

The answers to this question fall naturally into three groups: historic or public characters, characters from fiction, and religious characters.

The results show that boys lead in the choice of historic or public characters. 85% of the boys choose this group, while only 35% of the girls make such selection. Girls lead in the choice of characters from fiction, 64% making such choice as compared with 15% of the boys. The girls distribute their choice over a greater range of characters than the boys who seem to have a rather definite group of favorite ones.

Religious characters are named with the least frequency. .2% of the boys and .4% of the girls choose such characters. It is indeed disappointing to note that the many admirable characters of the Bible exert so little influence in the lives of adolescents.

The fact that less than one per cent of either boys or girls in the present study mention Bible characters confirms the occasion for concern so generally felt with respect to the lack of knowledge of and interest in the Bible as literature. On every hand there is abundant evidence of the great need for the reading and study of it.

Lists are here given of characters chosen by boys and girls. Only the ten most popular ones are named with the percentages for each character.

Boys: Washington, 28%; Lincoln, 21; Napoleon, 10; Roosevelt, 9; Edison, 8; Grant, 5; Caesar, 5; Franklin, 4; Taft, 3; Frank Gotch, 3.

Girls: Lincoln, 8%; Washington, 7; Florence Nightingale, 6; Ellen (Lady of the Lake), 5; Agnes (David Copperfield), 4; Joe (Little Women), 4; Portia (Merchant of Venice), 4; Clara Barton, 2; Evangeline, 2; George Eliot, 2.

Washington appears to be the great hero with the boys and receives the votes of 28% of them. The second choice is Lincoln with 21%. Earl Barnes who made an extensive study of children's ideals raised these questions "Is the personality of George Washington overworked in elementary education so that adults are tired of him? Is it well to use up our greatest Americans for nursery purposes?"[1]

Will Grant Chambers[2] in an article on "The Evolution of Ideals" gives a comparison of the preferences for Washington and Lincoln throughout the school years. We present it here for reference and comparison.

"Age.....	6	7	8	9	10	11	12	13	14	15	16
Washington....	5%	9%	15%	31%	38%	43%	39%	33%	28%	17%	16%
Lincoln.....	0	0	4	4	2	3	5	5	11	12	15"

From this comparison Washington seems familiar to chil-

[1] Studies in Education, Vol. II., p. 239.
[2] Ped. Sem., Vol. X., pp. 101-143.

dren just entering school, while the name of Lincoln is unknown until they are 8 years old. The per cent for Washington declines after 11 years and at 16 is only 1% ahead of Lincoln. Lincoln begins with 4% at 8 years and steadily increases to 15% at 16 years. The present study, however, finds Washington in the lead with 28% in the case of high school boys and Lincoln second choice with 21%. Though the lives and characters of these two great Americans are emphasized in elementary education, the fact that they lead in preference among high school pupils suggests a rather lasting appreciation of their virtues. With the girls the largest preference is for the same two men but we find the order reversed. Lincoln leads with 8% and Washington is second choice with 7%. While 64% of the girls choose characters from fiction, still they appear to be nearly equal with the boys in preference for and appreciation of the best qualities of citizenship.

Earl Barnes[1] found from his study of the ideals of London children that the English girls choose ideals represented by the opposite sex much less often than American girls. In a study of the ideals of a group of German children made by Henry H. Goddard[2] the opposite sex is chosen less often by girls than is the case in other studies. Barnes comments on the totally inadequate line of ideals for girls furnished in both the American and English schools. It is certainly true that we do not emphasize enough in story, reading, picture, and song the noble qualities of great female characters. It does seem that instruction in our schools might be modified so as to supply a greater number of worthy feminine ideals for girls. The womanly and domestic qualities of the sex should have decided commendation and encouragement in all possible ways.

Only a remarkably small number of unworthy characters were chosen by either boys or girls. The proportion of local characters was very small indeed. Two girls mentioned Miss Alice French, and one named Mrs. S. K. Stevenson in their lists of characters. One boy mentioned his minister as his ideal character, and two girls chose their teachers as ones whom they wished to be like.

Since so large a per cent of ideals of high school pupils is gained from reading history, biography, and fiction it seems not only the privilege of parents, teachers, and librarians, but their duty to give careful and thoughtful direction to the choice of books to be read. Not only this, they must by all

[1] Ped. Sem., Vol. VII., pp. 3-12.
[2] Ped. Sem., Vol. XIII., pp. 208-220.

possible means lead the young to appropriate to themselves ideals from worthy characters in their reading; to enrich and deepen the emotions by suggestion; in other words, so to help them that they will read the best characters into themselves and be able to bear them out in their own lives.

V. Books Desired or Possessed by Pupils

Next in order of consideration are the following questions: What books, not text books, do you possess as your own? Name five books that you are glad to own or would like to own.

These are answered in keeping with the tastes of boys and girls already pointed out. It is gratifying to note the number of worthy books possessed by high school pupils. Among the ones most frequently mentioned by boys are Stevenson's works, Henty Books, Call of the Wild, Lorna Doone, Life of Lincoln, Life of Washington, Ivanhoe, Dickens' Works, Printer of Udells, Shepherd of the Hills, Cooper's Works, Lives of Great Men, Shakespeare's Works, and Books on Natural Science. The ones more often possessed by girls are Miss Alcott's Books, Uncle Tom's Cabin, Rebecca of Sunny Brook Farm, Dickens' Works, Longfellow's Poems, Tennyson's Poems, The Crisis, Stevenson's Works, Shepherd of the Hills, Winning of Barbara Worth, Shakespeare's Works, St. Elmo, Little Shepherd of Kingdom Come, Romola, and Ramona. Biography is conspicuous in the boys' list, while poems are often named by girls. Shakespeare's Works are very popular with both boys and girls. The Bible is mentioned only once by boys and twice by girls among the books they are glad to own or would like to own.

While school and public libraries are a great help in furnishing suitable reading material for high school boys and girls, many books should be owned by the children themselves. Certain books need to be read, re-read, and referred to many times. The mastery of some book of worth exerts tremendous influence in the selection of other books and in the determination of reading tastes. Boys and girls appreciate ownership; they take justifiable pride in the possession of good books.

VI. Course of Study

1. *College Entrance Requirements*

In taking up the course of study a brief consideration will first be given to the college entrance requirements.

The two aims of the teaching of English as presented in the report of the Committee of Ten on Secondary Studies, are: (1) "To enable the pupil to understand the expressed

thoughts of others, and to give expression to thoughts of his own; and

(2) "To cultivate a taste for reading, to give the pupil some acquaintance with good literature, and to furnish him with means of extending that acquaintance."[1]

With these objects in mind the committee on College Entrance Requirements has planned a course of study presenting ways and means for accomplishing the purposes of the study of literature and English. A definite outline of work is arranged for each semester through the entire four-year course, and from this outline work may be selected for any high school. Two lists of books are presented, headed respectively *Reading* and *Study*. The list for study is intended as a logical and natural continuation of the pupils earlier reading, with stress upon form, style, meaning of words, phrases and the understanding of allusions, references, and so forth. The reading list is designed to encourage the habit of intelligent reading and to develop a taste and appreciation for good literature.

Many principals and teachers say that the influence of the entrance requirements in English is bad. They declare that the aims and work of the high school are interfered with by adherence to the required lists of books.

Indeed we believe that slavish adherence to required lists will work harm. But the lists have been revised and broadened until the new ones give a wide range of choice. In the hands of wise teachers, who have in mind the unity of literature and the tastes of pupils, these lists should bring about some good results. It is often necessary to make certain substitutions in harmony with pupils' interests and tastes, and additional lists for outside reading should be regularly furnished by teachers, including all good books that come within the range of the pupils potential appreciation.

The high school course as a whole is now passing through a period of rapid adjustment and it requires no prophet to foretell the passing of uniform entrance requirements in English and the coming of entire freedom to the high schools; but what will they do with such freedom?

2. *Books Disliked by Pupils*

Besides indicating the likes of pupils for certain types of literature, this study shows a dislike upon the part of some for certain books on the required list. Dislikes as well as preferences are important in determining the tastes and interests common to pupils of particular grades. Teachers need to know these so that they may both direct and follow

[1] Report of Committee of Ten, p. 86.

the interests and tastes of the pupils. In order to secure definite information on this particular point we included the following question: Name some books or selections that you do not enjoy. Why?

In the answers to this question the following books are most frequently named by both boys and girls as ones that they dislike: Ivanhoe, Sketch Book, Bracebridge Hall, Adam Bede, Henry Esmond, Robinson Crusoe, Pilgrim's Progress, Vision of Sir Launfal, Chaucer's Prologue, and Burke's Conciliation. Boys express a rather general dislike also for Mill on the Floss and David Copperfield, while with girls the Jungle Books and Last of the Mohicans are in decided disfavor.

Many of the pupils do not give reasons for disliking certain books; and most of the answers given are very indefinite and similar. Common among them are the following: The story is too monotonous, it is dry and behind the times, it is hard to understand and has not enough adventure, there is too much description in it, the book is not interesting and does not have a good ending. A large per cent of the girls state that they like everything they read.

3. *Books Suggested by Pupils to be Added to the Course of Study*

The last question in the list is the following: Name three books that you would like to have included in the course of study. The lists that follow are made up of the ten most frequently named by each class. *Freshman:* Miss Alcott's Books, Treasure Island, Double Play, Half Back, Betty Wales Books, Call of the Wild, Henty Books, Uncle Tom's Cabin, Girl of the Limberlost, Trail of the Lonesome Pine. *Sophomore:* Shepherd of the Hills, Miss Alcott's Books, Tom Sawyer, Huckleberry Finn, Little Minister, Lives of Great Men (Edison, Roosevelt, and Lincoln), Rules of the Game, Anne of Green Gables, St. Elmo, The Sea Wolfe. *Junior:* The Crossing, Life of Washington, White Company, Calling of Dan Mathews, The Crisis, Ben Hur, Miss Alcott's Books, Brewster's Millions, Ramona. *Senior:* Winning of Barbara Worth, White Company, Jack London's Books, Tom Brown at Rugby, Ramona, McCutcheon Books, Books on Army and Navy Life, Dickens' Novels, Shepherd of the Hills.

These lists are important in that they indicate general tendencies of interests and tastes for each of the four classes. They include preferences of both boys and girls and furnish something that we must recognize—a pupil's standard of reading material.

It is very desirable that habits of individual reading be fostered and to this end it seems well to stimulate and in some fashion control the outside reading of pupils. Some of the means for this control are discussions (oral and written), themes, reports (oral and written), discussions and talks outside of class periods, and note books. In this supervision of outside reading the object is not instruction, simply the development of good taste.

Pupils generally do not like to adhere strictly to a predetermined outline. While teachers should allow them wide range of choice in reading materials, they cannot give them absolute freedom. As suggested before, teachers should know the individual needs of pupils, and largely by personal influence they should guide them in the choice of all reading. The privilege of substituting books that pupils have found worthy and pleasing may well be accorded them. Personal recommendations from pupils do much to stimulate reading and raise the quality of books read by class members.

Using the results of this and other similar studies on the reading tastes of pupils as a basis, and having in mind certain ideals as to what pupils of high school years ought to read, we present an outline of suggestive types of literature suitable for outside reading for the four years.

4. *List of Books Recommended for Outside Reading*
First Year

Poems:—Stevenson, Heather Ale; Christmas at Sea. Bryant, Forest Hymn; Thanatopsis; Little People of the Snow; Sella. Holmes, The Deacon's Masterpiece; Grandmother's Story of Bunker Hill. Tennyson, Dora. Whittier, Barclay of Ury; Among the Hills; Snow-bound. Scott, Rosabella; Alice Brand.

Short Stories:—Hawthorne, Wonder Book; Tanglewood Tales. Irving, Alhambra; Tales of a Traveller. Harris, Uncle Remus. Hale, A Man Without a Country. Seton, Wild Animals I Have Known; Lives of the Hunted. Davis, Stories for Boys. Peabody, Old Greek Folk Stories. Stevenson, Island Nights Entertainments. Lamb, Tales from Shakespeare.

Biography:—Keller, Story of My Life. Franklin, Autobiography. Brooks, Historic Boys; Historic Girls. Eastman, Indian Boyhood. Hale, Boys' Heroes. Kaufmann, Young Folks' Plutarch. Yonge, Book of Golden Deeds.

Fiction:—Stevenson, Treasure Island; Kidnapped; David Balfour. Cooper, Spy; Deer-Slayer; Pilot; Prairie. Alcott, Little Women; Eight Cousins; Rose in Bloom; Little Men;

Joe's Boys. Monroe, Campmates; Canoemates. Dana, Two Years before the Mast. Wiggins, Rebecca of Sunny Brook Farm. Stockton, A Jolly Fellowship; Captain Chap. Wright, Shepherd of the Hills. Dickens, David Copperfield. London, Call of the Wild. Hughes, Tom Brown's School Days; Tom Brown at Rugby.

Second Year

Short Stories:—Harte, Luck of Roaring Camp. Dickens, The Chimes; Christmas Carol. Maclaren, Beside the Bonnie Brier Bush. Hawthorne, Snow Image; Twice Told Tales. Brown, Rab and His Friends. Van Dyke, Story of the Other Wise Man. Field, Little Book of Profitable Tales.

Travel:—Taylor, Views Afoot. Custer, Boots and Saddles. Grenfell, Voyage on a Pan of Ice. Stevenson, Across the Plains; Silverado Squatters; Travels with a Donkey. Davis, The West from a Car Window. Ralph, Our Great West. Peary, Northward over the Ice. Roosevelt, Hunting Trips of a Ranchman. Lummis, Tramp Across the Continent.

Comedies:—Shakespeare, Two Gentlemen of Verona; The Tempest; Taming of the Shrew. Goldsmith, She Stoops to Conquer. Sheridan, The Rivals; School for Scandal.

Novels:—Kipling, Kim; Captains Courageous. Clemens, Huckleberry Finn; Tom Sawyer. Barrie, Sentimental Tommy; Little Minister. Allen, Kentucky Cardinal; Choir Invisible. Blackmore, Lorna Doone. Dickens, Old Curiosity Shop. Wright, Shepherd of the Hills. Stockton, Rudder Grange; Three Burglars. Stevenson, St. Ives; Weir of Hermiston.

Third Year

Poetry:—Poems selected from the following: Palgrave (ed.) Golden Treasury, 2d Series. Knowles (ed.) Golden Treasury of American Songs and Lyrics. Field, Little Book of Western Verse; Second Book of Verse. Riley, Poems Here at Home; Old Fashioned Roses. Whittier's Poetical Works.

Essays:—Carlyle, Heroes and Hero Worship. Ruskin, Crown of Wild Olives; Sesame and Lilies. Thackeray, Roundabout Papers. Holmes, Autocrat of Breakfast Table; Professor at Breakfast Table. Lowell, Fireside Travels. Warner, My Summer in a Garden. Burroughs, Winter Sunshine, Signs and Seasons. Emerson, Friendship; Circles.

Tragedies:—Shakespeare, Romeo and Juliet; Hamlet; Othello; King Lear; Antony and Cleopatra; Cymbeline; King Henry IV, parts I. and II.; King Richard III.

Fiction:—Thackeray, The Virginians. Kingsley, Hypatia; Westward Ho. Doyle, White Company; Refugees. Churchill,

Richard Carvel; The Crisis. Wallace, Ben Hur. Kipling, Puck of Pook's Hill. Dickens, Dombey and Son; Oliver Twist. Henty, Wulf the Saxon; The Young Carthaginian. Mulock, John Halifax. Rice, Mrs. Wiggs of the Cabbage Patch; Lovey Mary. Tarkington, Gentleman from Indiana. Montgomery, Anne of Green Gables. London, The Sea Wolf. Jackson, Ramona.

Fourth Year

Poetry:—Milton, Paradise Lost, books I. and II. Tennyson, In Memoriam; Selected Poems. Browning, Sonnets from the Portuguese. Scott, Marmion. Bunyan, Pilgrim's Progress in words of One Syllable (Paraphrase).

Orations:—Burke, Speech on American Taxation. Choate, Death of Webster. Webster, Adams and Jefferson. Sumner, True Grandeur of Nations. Clay, On the Increase of the Navy.

Biography:—Irving, Life of Goldsmith. Hapgood, Abraham Lincoln. Washington, Up from Slavery. Dickens, My Father as I Recall Him. Hale, Lowell and His Friends. Palmer, Life of Alice Freeman Palmer. Cheney, Life, Letters, and Journals of L. M. Alcott. Stevenson, Letters, Vol. I. and II.

Fiction:—Austen, Pride and Prejudice; Sense and Sensibility. Hawthorne, House of Seven Gables; Marble Faun. Wright, Shepherd of the Hills; Calling of Dan Mathews; Winning of Barbara Worth. Eliot, Mill on the Floss; Middlemarch; Romola. Hugo, Les Miserables. Reade, Cloister and Hearth. Wister, The Virginian.

Criticism:—Brooke, Ten Plays of Shakespeare. Dowden, Shakespeare, His Mind and Art. Jameson, Characteristics of Women (in Shakespeare). Van Dyke, The Poetry of Tennyson. Stedman, Poets of America; Victorian Poets. Lowell, Among My Books; My Study Windows.

Summary

High school pupils read much outside of school. While this reading is not always of so good quality as that furnished in school, it is much better than it would be were it not for school influences. Girls read more than boys and distribute their reading over greater range.

Boys like best books of adventure, stories that are full of action and outdoor life; girls read for sentiment, beauty, and refinement of style.

While the pupils read a very creditable line of books, they read an over-abundance of light periodical literature. There

is not a sufficient number of standard newspapers and magazines taken in the homes.

There is a noticeable change in taste of both boys and girls with increasing age. Some books popular with freshmen entirely disappear from the lists before the senior year is reached.

Boys care less for the recommendations of others than girls do. They exercise greater independence and individuality in the choice of their reading than do girls.

A large per cent of the pupils talk over their reading with parents, friends, and teachers.

Boys choose as ideals historic or public characters, while girls very generally prefer characters from fiction. Religious characters are named with the least frequency.

A number of excellent books are owned by both boys and girls. Worthy books are very largely named as those which they desire to own.

Boys and girls are not "grown ups;" their tastes are and ought to be very unlike those of men and women.

The tastes and interests of high school pupils should be duly recognized and respected in forming a course of study.

Teachers must have a thorough acquaintance with the psychology of childhood and adolescence in order to give to the outside reading of high school boys and girls intelligent and sympathetic direction.

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PRECOCIOUS CHILDREN

By Katherine E. Dolbear[1]

Precocious Children of the Present

During the last few years some very remarkable experiments have been made; and those who report them maintain they show the possibility of a tremendous increase in the rate of learning among children if taught by certain methods from early infancy.

Viola Olerich, the four Berle children, Norbert Wiener, William James Sidis, Winifred Stoner, and Otto Pöhler form the first group. All except Viola Olerich and Otto Pöhler are children from families of unusual intelligence and might easily have distinguished themselves without special training.

Viola Olerich.—Viola was adopted in order to prove Professor Olerich's (36) theory of the importance of very early education. Her parentage is not stated; but there was no attempt to select any special child; health was the chief consideration, though she is described as weak and sickly at the time of adoption at the age of eight months and four days. A diary was carefully kept. To begin with she was a cry-baby, but was taught to amuse herself, and in a short time did not even care to be held much, crying stopped, and her disposition improved. One factor in the educational theory to be tested was that all learning should be through play, that an interest must be created in any direction it was desired for her to develop. At thirteen months she was given her first book; her attention was directed to pictures, and interesting things were told about them. In a few days she frequently got the book from the shelf where it was kept and went to Prof. or Mrs. Olerich for a lesson. When the lesson was over she placed the book back on the shelf, incidentally learning order. This book was used two months and then replaced by another. So far she had learned to observe, to attend and to memorize, had improved her vocabulary, and gained an appreciation of order. At seventeen months she learned to read from cards by the sentence method, using sentences she could already speak; after a time the word method was added. At two years and eleven months she read at sight with " force and

[1] The writer is indebted to Dr. William H. Burnham for the suggestion of this topic, and for personal assistance by criticism as well as valuable material from his lectures.

expression any reading matter given to her." German was begun at three years and two months, then French was added, both being taught by the sentence method since it is the most natural. Sentences in every day use were chosen as they made the subject easy and intelligible. At twenty months she could read the digits, and distinguish nine colors. The number blocks were hung with bright ribbons and were brought by her when called for either by number or color. At first two blocks were used, then others added as the first were learned.

She could draw on the board vertical, horizontal or slanting lines, a cross, a ladder or a circle, at one year and nine months. Even before this she could bring any one of thirty-four geometrical forms that was desired. She knew flags of twenty-five nations, photographs of one hundred famous men and women, all the states and territories of the United States, its currency, many kinds of seeds and leaves, bones of the human skeleton and many human organs; at two years she knew punctuation marks, and the parts of flowers. When three years old she received a typewriter and very quickly learned to use it with both hands; was proficient in translating French and German into English, and had gained a large vocabulary, including scientific terms in astronomy and geology, grammar, physical geography and history.

She was marvelous in power of attention, memory, observation and discrimination, reasoning, and ability as a critic. She gave exhibitions and greatly enjoyed the applause.

Prof. Olerich's belief is that intelligence and character depend almost entirely on postnatal education and only very little if any on heredity or prenatal influence, and that every healthy child properly educated under a system of interest, kindness and freedom will have an extensive vocabulary and a wonderful memory, so that by the age of eight years he will have a larger store of useful knowledge than is now possessed by the average graduate, and this without strain or effort.

The Berle Children.—In the Berle family (10) Lina at the age of three began several languages. They were taught orally in order that she might acquire attention, concentration, observation and quick and correct thinking. Mathematical training began at four years; this was mostly memory work, though terms were explained and by questioning it was made sure that she understood. Reading, writing and spelling came next, all of which were learned before the age of six. Each child in the family began at three or four years and was shown that "it is as much fun to study as to romp." Lina was a sophomore at Radcliffe at sixteen, Adolph passed

entrance examinations at Harvard before fourteen, Miriam was a High School pupil at twelve and Rudolph was expected to pass the preliminary examinations at Harvard at eleven.

Norbert Wiener.—Norbert Wiener (10) graduated from Tufts in 1910 at the age of fourteen. His thirteen-year-old sister is a high school pupil, and the nine-year-old sister has one year more in the grammar school. Prof. Wiener says: "All are encouraged to use their minds, to think for themselves and come as near to the intellectual level of their parents as possible. This necessitates constant watch on the part of the parents over their own actions; to use only the best English and to discuss subjects of real moment in a coherent logical way."

Norbert learned his letters at eighteen months by seeing his nurse draw them in the sand. He knew them all in two days. At three years he learned to spell and was reading fluently in a few weeks; at six he was acquainted with such excellent books as Darwin and Ribot. He was encouraged to question things he did not understand, but to work out his own difficulties as far as possible. His father emphasized the need of learning to think, not to memorize. At six years languages and history were taught and at nine algebra, geometry and trigonometry. A variety of studies was taken to avoid one-sidedness. Tactful compulsion by his parents was believed by them to have been most valuable. He is now at Harvard taking a post graduate course in philosophy, after having graduated from Tufts and having spent one year in graduate work at Cornell.

It was reported that he tried advanced work in physics, mathematics and biology but was not successful; that his work in philosophy was more satisfactory; but that he lacked originality and tended to be superficial. It seemed impossible for the boy to settle down and gather sufficient data—he wanted to draw conclusions at once and advance to something else; these conclusions were sometimes correct but often otherwise.

From early youth there has been a slow development of motor control. The boy was unable to play any games, or even toss and catch a ball, was awkward in all his movements indoors. Drawing was a bugbear. He always said he would do things over when errors were pointed out, but this he never did.

The college boys did not find him at all companionable; he associated with some boys of his own age but as he could not play their games and they did not care for his intellectual achievements the tie could not be strong.

William James Sidis.—Perhaps the most unusual boy is William James Sidis (8) who at thirteen was in his third year of special work at Harvard.

The following statement by his father, Dr. Boris Sidis of Harvard, suggests the theory of the boy's education (8):

"The notion that a child's mind should be allowed to lie fallow is utterly wrong and pernicious. The child is a thinking animal and no power can keep him from thinking; from the moment his enquiring eyes first take in the details of his surroundings he begins the mental process which education is intended to guide and develop. He observes, draws inferences from everything he hears and sees and seeks to give explanation to his thoughts. Left to himself he is sure to observe inaccurately and make erroneous inferences. Unless he is taught how to think he is sure to think incorrectly and acquire wrong thought habits, causing him to form bad judgments respecting matters vital to his own and the community welfare. His learning should begin as soon as or even before he starts to talk. There is no danger of overtaxing his mind, the effect will be to develop and strengthen it by accustoming him to make habitual use of latent energy which most people never utilize at all."

William James Sidis began his education by use of his observational and reasoning faculties before he was two years old, and by the aid of blocks learned to read and spell before he was three. His reading was to give him a foundation for sound reasoning. He learned in six months to use the typewriter with considerable dexterity when only three and one half to four years old. At six he began going to school, passing through all the grades in half a year. He studied at home for two years and entered high school at eight years, where he stayed three months. There seems to be some difference in point of view. It is said that he was so full of pranks at the high school that it was a cause of considerable relief to have him withdraw, as his presence was making the maintenance of discipline very difficult. It may be added that in his book on Philistine and Genius Dr. Sidis speaks bitterly of the insistence of discipline and the lack of appreciation of genius in schools.

He had mastered algebra, trigonometry, geometry, and differential and integral calculus at nine or ten years.

At eleven years of age he entered Harvard as a special student, and is still there at work on higher mathematics and science. During his first year in college he delivered before the Mathematical Club a paper on four dimensional bodies.

Dr. Groszmann states that his health seems to have been good, and he is large for his age, but is characterized by a certain awkwardness in manual activity and motor expression, suggesting that certain areas of his brain which con-

trol motor activity are underdeveloped and that his nervous system has not its normal strength. That he is egotistical is shown from the fact of his remarking: "I wonder whether the school children in future generations will celebrate this as a holiday because it was the day on which I began the study of the physical sciences." (19) That he is of an imaginative and nervous temperament was shown in his early childhood. It is reported that a guest was sitting in the room near the boy, and she thoughtlessly started to tear up a scrap of paper, when the child sprang upon her fiercely. His mother explained that to him all things were alive and that tearing paper was hurting something.

The effect of his education seems to have been to produce a boy who can do wonderful, even brilliant reasoning in mathematics but has difficulty in transferring that reasoning power to every day affairs. In a class room at Harvard where a formula was being explained the boy became bored and began to entertain himself by balancing his hat upside down on his head. This so distracted the rest of the class that he was asked to refrain. When asked to remain after class he said he couldn't do it; so the class was excused ten minutes early and the professor made an effort to have the youth see that he had no right to do anything which interfered with the best conditions for the whole class. But the boy would not see it in that light, and would only say, "My father never told me that." To him, it was merely an infringement upon his rights. Another effect of the education in this instance is the lack of respect for older persons. During the discussion after his paper on four dimensional bodies at the Mathematical Club a question was asked, and one of the older professors answered it by explaining in different terms than those the boy had used; whereupon young Sidis turned to him saying: "I can not see that you have added anything to the discussion."

Several other children have been educated along the line Dr. Boris Sidis advocates with something of the same results.

Ervin Palda.—A little boy five years old was being taught his letters by his mother while the two-year-old little brother was present, apparently paying no attention, but one day the younger one, Ervin Palda, (10) astonished his parents by showing he knew the letters quite as well as the older boy. He was then taught to spell and do arithmetic with blocks and his progress was remarkable; he took delight in the play, spending hours shifting blocks to spell words or do sums. When he was three years of age his parents became alarmed at the tremendous progress and took away the blocks fearing the little fellow was being robbed of his childhood. He soon

forgot all letters and figures and had to learn them all over upon entering school.

Winifred Stoner.—Another example is that of a little Southern girl, Winifred Stoner. (10) In this case the chief educational influence was suggestion. Her education began virtually as soon as she was born. A nursery was especially prepared for her, with huge copies of great paintings hung upon the walls, while sculptured models were placed about the room in order that her eyes from the start might rest on beautiful things. Her nurse when putting her to sleep would scan Virgil and other classical authors, while during the day Mrs. Stoner would repeat to her verses from some of the world's great poems.

This was continued daily until the child could talk, and then it was discovered that she herself could recite the classical passages and poems which had been repeated to her. She was taught to read and spell and at the age of three years to use a typewriter upon which she made rapid progress. Not satisfied with the few verses which she had learned from others, she began to make some of her own and at the age of seven published a book of poems, of which the following is a sample.

"One day I saw a bumble bee, bumbling on a rose,
And as I stood admiring him, he stung me on the nose;
My nose in pain, it swelled so large it looked like a potato.
So Daddy said, though Mother thought 'twas more like a tomato.
And now dear children, this advice I hope you'll take from me,
And when you see a bumble bee, just let that bumble be."

She is now nine years old and has recently spent some time in Palo Alto, California, but the impression she left there was that of being a very much spoiled, disagreeable and vain little girl and not a *Wunderkind* at all. When asked what languages she really knew she said just French, Esperanto, and English fluently; and then when the visitor attempted to carry on a little conversation in French the child declared she was rusty in it. She has learned a few sentences in several other languages, but her chief interest at present is in calling attention to her very white and even teeth, her huge eyes and her hair. She does not get along well with other children, but prefers to talk about herself with older people. Considerable doubt was expressed as to just how much the child herself did on the poems published under her name several years ago.

Otto Pöhler.—Otto Pöhler, (4) the only child of a head butcher, was born Aug. 20, 1892. He showed no unusual

ability until fifteen months old; his teeth developed at the proper time and he learned to walk and to speak at the usual age, and in general his early development was normal.

When fifteen months old his grandmother pointed out to him and told him the names on door plates and signs; she also wrote the name Otto for him. When the child got hold of a newspaper he found his name Otto in print. She pointed out many words and he showed great memory for them and for numbers. At twenty-one months he was very childish and restless; he noticed on the calendar in Latin print, Apr. *27*, and read it as April two seven. From a book on the desk, he read the German title *Das Stottern und seine gründliche-*. The word Stottern gave him trouble, especially the s and the two t's. He preferred to read only the chief words and his pronunciation was not perfect. His interpretation of the watch, owl and windmill in pictures was correct, but he could not copy and had no taste for counting fingers or for colors. At this age he was well formed and mediumly strong.

When two years and two months of age he was examined; was shown a medical calendar from which he read *Reichs-Medizinal-Kalender. Begrundet von Der Pa-ul Börner. Eins acht neun vier.* From this time on there was a marked improvement in reading and pronunciation. At four years he was again examined. His body was not strong but not badly developed, his skull long, strongly developed in the occipital region, and his face was delicate with large lively eyes. The expression of concentration was natural, though; except when paying close attention he was restless, keeping his whole body in motion. He did not seem beyond his age and was entirely fresh and normal, played railroad and soldiers, objected to systematic teaching, but had a passion for reading and could remember quantities of dates in history and literature.

He was shown two twelve place numbers which differed only in the middle figure, but he read them immediately and stated their difference. Outside of his interests his memory was not at all remarkable. He was especially skilled in reading bad handwriting and filling in abbreviations as *"In d. grossen Schl. bei L. 18. X. 18.. wurde Nap. besiegt."* He had no inclination to write, and though he read numbers he showed no desire for reckoning. He knew the multiplication table. His memory was not merely mechanical but rested upon intelligence. His disposition was lovable and affectionate.

At fifteen he was in Obersekunda of a Gymnasium, a slender youth with a narrow face. His eyes were not so large in proportion as in childhood, nor was the back of the head so prominent. His movements were lively and speech

quick, and there was a slight quivering of muscles about the mouth. It was his intention then to go to the university to study German Literature.

Precocious Children in the Past

The above are representative cases of precocious children of the present day. The next group gives a glimpse of some in the past, Heinrich Heineken, Richard Evelyn and Emelie Basedow.

Heinrich Heineken.—Christian Heinrich Heineken (3), the son of a painter, was born in Lubeck on Feb. 6, 1821. His own mother was not able to nurse him, so a wet nurse, the wife of a soldier, was procured to care for him. Until his death in his fifth year, he remained dependent on this nurse and could not be weaned.

He was a delicate, beautiful child. About his room were grotesque decorations painted in gold, and the white stove was embellished with figures. One day when ten months old the child was noticed staring at one of these figures for a long time. He was told that one was a cat, another a tower, a mountain and a lamb. On the next day when asked, "Where is the mountain, the cat, the tower, the lamb," he pointed to them correctly. Soon after he began to try to say cat, etc. He watched with great attentiveness the mouth and tongue of the speaker and tried to move his the same way. This was the beginning of his picture reading and near the end of his first year he learned to read through pictures.

As soon as his wonderful power of memory was observed a teacher was chosen for him and he was set to work on biblical history; before a year old he knew the story of Moses, and had learned by memory to repeat the following verse:

"Den ersten Tag wards Licht, Darnach stands hoch und ferne
Der Himmel, dann die Erd', am vierten Tag die Sterne,
Am fünften kamen Fisch und Vogel aus dem Meer,
Der sechste gab das Vieh wie auch den Menschen her."

During his thirteenth month he learned the rest of the history of the Old Testament and in the fourteenth the New Testament.

An attempt was made to teach him to eat but it was futile. He asked the names of foods, where they came from, how made and all about them, would even become angry when questions were not answered, but could not be coaxed to eat them.

After he was fourteen months of age the child began the history of the world and could answer any question asked. In his fourth year he could read printed and written matter, although he never learned to write. The multiplication table was learned and recited in order or skipping about. He could relate whole stories in French and knew fourteen hundred sentences from good Latin authors; in geography he knew all the important places on the map.

The child was often sick and the doctor advised a sea trip. This gave an opportunity to show him off in new regions, and he was by request, taken before the king in Copenhagen. During the voyage there was a storm at sea and a panic ensued, the child said, *qui nescit ovare, discat navigare.* Then he sang a hymn; and when the storm was over he remarked, *anchora navis sistitur; deserit Ille suos nunquam, qui cuncta gubernat,* and on landing: *viator portat humeris in bulga, quod capere nequit funda vel marsupium.*

Then he was taken before the king and his first remark there was: "Permit me sir, to kiss the hand of Your Majesty and the hem of your Royal Garment."

The king allowed the child to take his order in his hand, and asked what it was, to which the child replied: "It is the order of the elephant, garnished with diamonds. That is the elephant, what a proboscis it has;" then he examined the diamonds and said: "Jewels are precious but the life of the king is more precious."

His knowledge was not a mere feat of memory for he could discuss his information intelligently. He began to learn to write but his constitution gave way and he died at the age of four years and four months.

Richard Evelyn.—Richard Evelyn (6) was a beautiful child of rare intelligence. At two and a half years he had learned all his Catechism and could read "English, Latin, French or Gothic letters, pronouncing the first three languages exactly."

"Before or during his fifth year he could read most written hands, decline nouns, conjugate the regular and most of the irregular verbs; had a large vocabulary in Latin and French, could make congruous syntax, twine English into Latin and vice versa, knew the government and use of relatives, verbs, substantives, ellipses and many figures and tropes, and made considerable progress in Comenius' "Janua," began himself to write legibly and had a strong passion for Greek.

"He was all life, all prettiness, far from morose, sullen or childish in anything he said or did. He had a wonderful disposition to mathematics, had by heart divers propositions of Euclid which were read to him in play, and he would make

lines and demonstrate them. He died at the age of five years and three days. His sister, also a prodigy, died at 19 years of age."

Emelie Basedow.—From an early age Emelie Basedow (63, p. 238) was taught the names and properties of objects by hearing them clearly stated. The greatest care was taken to prevent confusion of associations; she saw in the mirror not herself but her image, in photographs she saw not men but pictures of them. Half a year of this training taught her to speak clearly, judge rightly and make words and sentences out of letters.

At the end of her third year she learned to read satisfactorily without spelling out words. Then she began French and in three months could speak and in two weeks more could read it. She knew a considerable number of natural objects and their uses and origin, she recognized geometrical forms, could add and subtract and write. All these she learned through play without strain or harmful sitting still. Besides this, household arts in the kitchen and sewing room were practiced. Religion was taught through nature—she did not fear thunder and was free from superstitions. At four and one-half years she learned to speak Latin in a remarkably short time.

Educators began to comment upon the case; some favored the plan but more were opposed. When asked what such training was for, the father answered "As a teacher of other daughters," but the real reason was to make a reality of the ideal child of Rousseau. Rousseau's ideal, however, was a boy and a nature child. As the effort to produce a nature child had been unsuccessful, Basedow made a *Wunderkind* of her. Thus Emelie became the parade horse of Dessau. Her exhibitions made a great impression on visitors and attracted attention to the educational theory of Basedow.

Some very flattering and favorable judgments went out into the world. Kant was full of hope and wanted the experiments continued. The Prussian minister also favored the work, but opponents raised their voices; the gymnasium teachers doubted the wisdom of teaching Latin. One who previously believed in the theory changed his opinion and brought out and emphasized the difference between theory and practice. He said he would not allow calves to be taught in such a way, much less human beings.

Basedow founded a school for educating children from real things instead of words and undertook the enterprise with tremendous enthusiasm, but he had few pupils and did not make it a success.

A Group of Geniuses

The next group is of a few geniuses, Goethe, Lord Kelvin, John Stuart Mill, Leonardo Da Vinci and Karl Witte.

Goethe.—Goethe (23) was a very delicate child, but of all around ability. He was quite as talented in music and arts as in literary pursuits. His artistic nature was shown early by his fondness of standing by the window watching clouds, sunsets and thunder storms. His soul seemed open to every influence and was easily swayed. When at six years of age he learned of the terrible earthquake at Lisbon which destroyed so many human lives, he at once lost all faith in Providence. His devoted mother understood how to guide his interests and fancies and to turn them to noble things. Every night she told stories to her two children. She represented Fire, Water, Earth and Air as beautiful princesses and gave a meaning to all that takes place in nature. Here is a bit from her diary concerning the story telling hour.

"There I sat, and there was he devouring me with his great black eyes and if the fate of one of his favorites did not go right according to his sense, I could see how the angry vein would swell in his forehead and how he would choke down his tears. Many a time he would interfere before I could bring about the turn of affairs. Then if I halted and put off the catastrophe till the next evening I could be sure he would repeat everything aright up to that point and where my imagination fell short it would be patched out by his. Then if I took up the threads of fate on the next evening and turned them according to his plan and said 'you guessed it; that is what happened' he would be all fire and flame and his little heart could be seen to beat under his ruffle. He was his grandmother's pet and to her he would confide all his ideas of how the story would go, and from her I could learn how it must go to conform to his wishes; and in this way there was a secret diplomatic transaction between us that neither of us betrayed to the other. So I had the satisfaction of continuing my tales to the delight and astonishment of my auditors who without recognizing that he was the author of all the marvelous occurrences saw with glowing eyes, events to fall out according to his keenly desired plans, and greeted the finishing of it with enthusiastic applause."

Since Goethe had all around ability, his many friends marked out as many brilliant careers for him, but his strongest taste was for aesthetic and literary pursuits. It is said that as a child he could not bear to play with ugly looking children. The exercise books which he wrote between seven and nine years of age were filled with "poetical effusions and moral reflections." His earliest drama was written at ten. It was his father's desire that he should take up law as a profession but although the young man was registered in the law department at the university he ran away from the assigned lectures to attend some on art and literature.

William Thompson.—Lord Kelvin's (10) father, John Thompson, was a farm laborer who had fitted himself for college without the help of good text books or skillful teachers but graduated from the University of Glasgow with honors, and was a teacher of mathematics in a Belfast school at the time of the boy's birth. Regretting the lack of education in his own childhood and the struggle it had cost him to prepare for college, he determined from the first that his boy should receive the education he himself had done without. Then too he felt that if the child began early enough and kept at it, he could not fail to be better fitted for life than the ordinary child. As soon as the boy could speak, his father taught him his letters and never tired of talking with him, always taking pains that the subject should be one worth considering and which might be of benefit to him when his interest should become aroused. History, geography, Latin and mathematics were subjects to which his attention was turned before the age of six. At this time his father was called to teach in the University of Glasgow and the boy was encouraged to attend lectures there. This was done in order that he might learn what subjects were most interesting to him. The youthful lecture goer tried to explain to his father the demonstrations he had seen and soon proved to be especially interested in physics, making apparatus for his own experimental work. He was admitted to the university as a regular student at ten years and graduated at fourteen with highest honors.

Mill.—John Stuart Mill (32) was educated by his father and learned a large number of subjects in a wonderfully short time. Greek was begun at three years; the words were written on cards and learned from these, then followed inflections of nouns and verbs and translation. Before his eighth year, he had read six dialogues of Plato, Memorials of Socrates, the whole of Herodotus and other authors. At eight he took up Latin. In all subjects his father demanded not only the utmost he could do but much that was utterly impossible. The father and son took frequent walks, discussing books on government, history, mental cultivation and morality. A few children's books were borrowed for him but most of his time was taken with serious study. Not only did he study Latin but taught it to his younger brothers and sisters. He soon began Euclid and algebra and later geometry and calculus. He was forced to write verses, a practice which he thoroughly disliked though he enjoyed writing histories. In the middle of his teens he gathered about him a group of friends who carried on weighty discussions on topics of history, sociology, political economy and logic. Referring to these he writes:

"It was also through these that I acquired or very much strengthened a mental habit to which I attribute all I have ever done or ever shall do in speculation; that of never accepting half solutions of difficulties as complete, never abandoning a puzzle but again and again returning to it until it was cleared up; never allowing obscurities in a subject to remain unexplained because they did not seem important, never thinking that I perfectly understood any part of a subject until I understood the whole."

Karl Witte.—"Karl Witte (11) was the son of a German country clergyman, and was born in July, 1800, in the little town of Lochau, near Halle. At the time of his birth his parents were still mourning the loss of another child, a fine, handsome little fellow, who had died in infancy. But the advent of this second son did not bring them the consolation they had fondly anticipated. When he came into the world, the little Karl was not only most unprepossessing in appearance, he even seemed to be mentally defective. His mother turned from him in horror, his father wondered in what way he had offended God that he should be afflicted with a witless child."

One day several weeks after the baby's birth the father thought he detected some signs of intelligence. He was determined to develop the child's mental powers and to make a man of him. He realized that most people fail to use their powers of reason and to devote themselves to things of true worth; that the great need of the people was to learn to think aright and what to think about. Realizing these needs, he developed an educational scheme which he used for his son. It was not the wish of the father to make an infant prodigy of his son, but merely to develop his reasoning powers during the plastic period of childhood.

As soon as the child could speak, different objects in the room were pointed out to him, the uses were stated and the materials out of which they were made and the processes by which they were manufactured were explained in detail. When he could walk he went with his father through the streets and into the country, where more information was given on practical utility, moral worth and aesthetic value.

The child was encouraged to ask questions and these were answered in detail; superficiality was avoided in order to impress the boy with the need of thoroughness and sound reasoning. When the child asked a question the father could not answer intelligently, he "confessed his ignorance and suggested that by working together they might obtain a satisfactory answer." He believed that baby talk is intellectually enervating and that as "language is the tool of thought" the sooner

the child was taught to use it fluently, clearly and correctly the better.

Before Karl was six all who talked with him were amazed at his intelligence. His habits of thought were logical, his information accurate, and he showed proficiency in language. The child listened attentively whenever his father was conversing with friends in French and begged to be told what had been said. This suggested the possibility of having Karl learn French, and some simple translations of tales the child already knew were bought and he was told to read for one hour every day. No attempt was made to teach the grammar as the father believed the boy could best learn that in the course of his reading. Within a year Karl was reading French with ease. In the meantime he had begun the study of Italian and from that he passed on to Latin; then came English and Greek, and in all he made remarkable progress. The boy's questions were answered, but at the same time he was impressed with the importance of overcoming his own difficulties.

At the age of nine, "he had read Homer, Plutarch, Virgil, Cicero, Fénelon, Florian and Metastasio in the original, besides Schiller and other classic German writers."

Heyne examined young Witte and reported: "I found in him no one-sided mental development, no preponderating faculty. Memory, imagination and reasoning were about in equilibrium. In other matters besides those inculcated by education I found him a happy, lusty boy, which was to me a quieting thing."

Although Parson Witte himself was neither artist nor scientist, he believed he could awaken those interests in the boy, and consequently whenever they went to cities they visited art galleries, natural history museums, zoological and botanical gardens, and all sorts of manufacturing establishments. Never for a moment did he hint to the boy that these trips were taken for educational purposes, but without the boy's ever suspecting it he was learning much of value in elementary botany, zoology, physics and chemistry. The method by which the child was taught is most instructive:—for instance, in teaching him geography he was taken to a high tower and there he was asked to draw on a sheet of paper, brought for that purpose, the villages of the surrounding country. Other visits were made and the boy after correcting his first efforts, added the rivers, forests and lakes of the region. His father then "bought for him a set of maps showing in succession the part of Germany in which he lived, all Germany, Europe and the other continents." They studied these together as a game and the boy became most enthusiastic.

At nine years of age he had learned so much and understood so well how to use his mental powers that he was sent to the University of Leipzig. Here, as at the Universities of Göttingen, Giessen, and Heidelberg, where he studied later, his career was extremely brilliant. No subject seemed beyond his powers; but he did unusually well in philosophy and mathematics. Before he had passed his fourteenth birthday he was granted a Ph.D., and two years later was appointed teacher at the University of Berlin; but the students and faculty of the university objected to having a mere youth act as instructor, and so his appointment was withdrawn. The King of Prussia, who had watched with interest the boy's career, suggested that before he settled down into a profession, foreign travel might be beneficial; and he himself granted a stipend for the boy to live abroad in comfort.

Karl went on his travels with the intention of studying law for a profession. While in Florence he chanced to meet some talented women, who in speaking of Italian masters of literature said to him half in jest and half in earnest: "There is one Italian writer, however, the greatest of all, whose works I should advise you to let alone. We Italians sometimes try to persuade ourselves that we understand Dante, but we do not. If a foreigner sets about it we can scarcely repress a smile."

Young Witte at once bought an expensive edition of Dante and after reading the Divine Comedy read what the commentators said about it and was impressed by what he considered their narrowness and error. Then began the work in earnest—he read every scrap of Dante that was to be found and declared that he would some day bring about a better understanding and appreciation of Dante, which he did five years later when he published, in Germany, "one of the most important literary essays of the 19th century entitled 'On Misunderstanding Dante.'" In time he became the foremost scholar of Dante in the world. This was but an avocation—his real work was in law. Soon after his return from Italy, in 1821, he was made lecturer on jurisprudence at the University of Breslau, being appointed full professor two years later, at the age of twenty-three. A year later he was transferred to Halle, where he spent the remainder of his distinguished life. Mr. Bruce quotes the words of one who knew him well: "He lived in Halle for nearly fifty years a loved man and honored teacher, a helpful and valued member of the professional staff, a true patriot who had boldly stood at the head of the *Preussenverein* in the time of the Revolution, a loyal conservative, a devout Christian and elder of the church, a scholar overwhelmed with honors and distinctions,

a tender husband and father, till a gentle death closed his rich and singularly happy life on March 6, 1883."

Leonardo da Vinci.—Leonardo da Vinci (57) was a genius of the first rank, and unlike many he had a long life, dying in his 76th year. Vasari's description of him is a good one and may be quoted at length:—

"The richest gifts are occasionally seen to be showered, as by celestial influence, on certain human beings; . . . beauty, grace, and talent being united in such a manner, that to whatever the man thus favored may turn himself, his every action is so divine as to leave all other men far behind him. . . . This was seen and acknowledged by all men in the case of Leonardo da Vinci, in whom, to say nothing of his beauty of person which yet was such that it has never been sufficiently extolled, there was a grace beyond expression which was rendered manifest without thought or effort in every act and deed, and who had besides so rare a gift of talent and ability, that to whatever subject he turned his attention, however difficult, he presently made himself absolute master of it.

"In arithmetic, for example, he made such rapid progress in a short time during which he gave his attention to it, that he often confounded the master who was teaching him, by the perpetual doubts he started, and by the difficulty of the questions he proposed. He also commenced the study of music, and resolved to acquire the art of playing the lute, when, being by nature of an exalted imagination and full of the most graceful vivacity, he sang to that instrument most divinely, improvising at once the words and the music. . . . But, though dividing his attention among pursuits so varied, he never abandoned his drawing, and employed himself much in work of relief, that being the occupation which attracted him more than any other. His father observing this, and considering the extraordinary character of his son's genius, one day took some of his drawings and showed them to Andrea del Verrocchio, who was a very intimate friend of his, begging him earnestly to tell him whether he thought that Leonardo would be likely to secure success if he devoted himself to the arts of design. Andrea Verrocchio was amazed as he beheld the remarkable commencement made by Leonardo and advised Ser Piero to see that he attached himself to that calling. . . . Leonardo was sent to study in the workshop of Andrea, . . . and with the utmost readiness, not only gave his attention to one branch of art, but to all the others, of which design made a portion.

"He worked in sculpture, in architecture (designs for ground plans and structure of entire buildings) while still a youth first suggested the formation of a canal from Pisa to Florence, by means of certain changes to be effected on the river Arno. (This magnificent work was executed about two hundred years after.) He made designs for mills, filling machines, and other engines, which were to be acted on by means of water.

"By means of levers, cranes, and screws he showed how great weights might be raised or drawn; how ports and havens might be cleansed and kept in order, and how water might be obtained from the lowest deeps. . . . He investigated properties of plants, made observations on the heavenly bodies, to follow the movements of the planets, the variations of the moon, and the course of the sun.

"His master Andrea Verrocchio was engaged in painting a picture, the subject of which was San Giovanni baptizing Jesus Christ;

in this Leonardo painted an angel holding some vestments; and although but a youth, he completed that figure in such a manner that the angel of Leonardo was much better than the portion executed by his master, which caused the latter never to touch colors more, so much was he displeased to find that a mere child could do more than himself. . . . Leonardo was often absorbed (half a day) in thought before his picture without apparently accomplishing anything. Men of genius are sometime producing most when they seem to be laboring least, their minds being occupied in the elucidation of their ideas, and the completion of those conceptions which they afterwards give form and expression with the hand. He prepared a kind of paste from wax and made from this while in a half liquid state, certain figures of animals, entirely hollow and exceedingly slight in texture, which he then filled with air. When he blew into these figures he could make them fly through the air, when the air escaped they fell to the earth.

"One day a very curious lizard was brought in and for it Leonardo constructed wings, made from skins of other lizards. Into these wings he put quicksilver so that when the animal walked the wings moved, also with a tremendous motion; he then made eyes, horns, and a beard for the creature which he tamed and kept in a case; he would then show it to the friends who came to visit him and all who saw it ran away terrified.

"He occupied himself much with mirrors, and optical instruments, and made the most singular experiments in seeking oils for painting, and varnish to preserve the work when executed."

Typical Musical and Mathematical Prodigies

Georg Szell.—Of Georg Szell (24), the first and only child of well-to-do parents who was born in Budapest in 1897, it is reported:

"He inherited a vigorous and healthy constitution, is short and plump, near sighted but exceeds in weight, height, chest circumference and head measurements the average of his age and type. He could speak intelligibly at nine months and at eighteen months could sing correctly songs in three languages. At this age the playing of false notes on the piano would set him in tears. At four years he had learned without instruction to read and write. When he could not read music he improvised. At seven years of age he began the systematic study of music and harmony in Vienna. An aria was composed and completed in less than an hour when he was ten years old. His compositions are formal and classical, towards them he holds himself in the position of a critic and considers only twenty out of the two hundred to be of any value. There is no extraordinary musical ability on either side of the family."

Mozart.—Wolfgang Amadeus Mozart (20) showed a decided talent for music at a very early age. When only three he listened attentively when his sister was taking music lessons, entertained himself for hours playing thirds, and showed a good memory for the music he had heard. This interest on the part of the child attracted his father's attention and he began to give the boy lessons on the harpsichord.

So rapidly did the child advance that the father was kept busy writing out more and more difficult pieces for him, but the boy, not satisfied with these, began to compose some himself. These first pieces which the boy improvised while his father wrote them down, showed his remarkable feeling for beauty, both in form and sound. He soon learned to write his own compositions and composed a concerto so difficult that no one could play it. He is said to have been too serious a child to be childish; indeed, many people feared he would not live to grow up.

When the boy was in his seventh year his father decided to travel with him and exhibit his musical ability. His sister Mariette, who was five years older, was also a musical prodigy, and the two children were received with much enthusiasm and admiration as they went from place to place. On one expedition young Mozart took scarlet fever, on another small pox. These trips continued for several years, but after the novelty of seeing the boy and hearing him play his own compositions, the enthusiasm died down and it was with much difficulty that he could earn a living. His unusual keenness of ear and remarkable memory are well illustrated by an incident which occurred when Mozart was fourteen years old. He had arrived in Rome during holy week and went to the Sistine Chapel to hear Allegri's Miserere. This he wrote down in its entirety after one hearing, merely correcting a few errors when he heard it a second time.

His power of concentration and endurance are shown by the following incident. It is reported that "his success in Italy procured him two commissions, one from Milan for an opera and the other for a dramatic serenata. The score was completed in a fortnight, a remarkable instance of rapidity, considering that he had a violinist overhead, an oboe player beneath and a pianoforte teacher next door, all hard at work the whole day long, a babel of sounds which he, however, pronounced to be 'delightful for composing, as it gave ideas.'"

He had received a conscientious and systematic education, and had concentrated all his powers on music; he could play skillfully on three instruments, piano, organ and violin, and became a most prolific writer. "Schubert who had heard some of his music spoke of him as a 'wonderful genius of a composer' and added that 'unless Mozart should prove to be a mere overgrown product of the forcing house, he will be the greatest composer that ever lived.'"

He lacked ability to manage his financial affairs and this was not at all bettered when he married a woman who was quite as improvident as he. In a short time serious difficulties

arose and continued to the end. He died at the age of thirty-four, just as a yearly salary was to be paid him and prospects seemed unusually bright.

Inaudi.—Jacques Inaudi (33), an Italian by birth, spent his early years in tending sheep. His interest in figures began at about the age of six and when seven he could mentally multiply five figures by numbers of five figures; in other respects his education was very limited and he did not learn to read and write till twenty years old.

He showed no special ability outside of mental calculations and his memory for most things except figures was rather poor. He earned his living at last accounts by giving exhibitions of his ability as a professional calculator. One of his favorite problems was to tell the day of the week upon which a given date will fall; others were to subtract one twenty-one place figure number from another; to add five six figure numbers and to extract the cube root of a nine figure number.

"As each number was announced he repeated it slowly to his assistant who wrote it on the blackboard and then read it aloud to make sure there was no mistake. He repeated the number once more and then devoted himself to the solution, making an occasional remark to keep the audience in good humor." Really he began the work as soon as the numbers were given and all the writing down and repeating was to clearly establish the problem in his mind and to give him a good start so as to make the time of solution seem much shorter than it actually was.

Inaudi represents well the auditory motor memory type, and to prevent his hearing and repeating the numbers very greatly delays his solution of the problem. When problems were given him in writing he read them aloud to himself. That he is also assisted by motor images is shown by the fact that during the process of working out the problem he is constantly whispering in a low tone; and when in one of Binet's tests he was asked to sing on one tone as he worked, the time required for calculation was nearly five times as great as usual, and even then his voice "betrayed the fact that he was articulating." (5)

He had a most remarkable memory for figures, and on one occasion was able to repeat, after one hearing, thirty-six figures which were read to him in groups of threes. In attempting to repeat fifty he became confused and got only forty-two correct.

Most of the mathematical prodigies are of the visual rather than the auditory type, but in other respects they work in much the same way as Inaudi.

The Learning Process in Feeble Minded, Normal and Precocious Children

Attention.—Feeble minded children have but little ability to give sustained attention. It has often been found beneficial to teach them in very bare, sparsely furnished and gray walled rooms in order that there shall be less to distract the attention.

Normal children are able to pay much better attention and for longer periods, though there is much variation extending from the shorter periods of attention of the poorer student to the prolonged attention of the best. This also varies with the subject—a pupil who can give sustained attention along one line may not show the same ability in another subject. The genius shows a most remarkable power of attention.

The spontaneity of attention of precocious children and geniuses is like that of a child and as such is more effective than the voluntary or active attention of an adult. Spontaneous attention is not characterized by effort, and consequently fatigue is reduced to a minimum. Although there is no hard and fast line between voluntary and spontaneous attention, the degree of spontaneity in attention is great enough in these cases to warrant our considering it as the latter.

In other respects the attention of precocious children more nearly resembles that of adults. It is not diffused, as is often the case with children, but instead is clearly focussed on definite things, nor is the attention fluctuating as in the ordinary child.

Most children show a dynamic form of attention; stimuli must follow each other in quick succession, but with the precocious child one stimulus is sufficient to set off a series of associations and the attention is more static. It also has much greater endurance since the experiences of the precocious child are broader and fatigue varies inversely as the ease of apperception. Far greater is this endurance in the genius than in the feeble minded child, whose poverty-stricken mental furniture gives no place for new ideas to rest.

Mozart's concentration gives a fair picture of the part attention plays in the work of a genius. "His thoughts were always occupied with music—'you know' he wrote his father, 'that I am, so to speak, swallowed up in music, that I am busy with it all day long, speculating, studying, considering.' His inner world was beyond the reach of any other disturbance." (20)

Prof. James (26) has noted this characteristic of genius. He says:

"The sustained attention of the genius sticking to his subject for hours together is for the most part of the passive sort. The minds of geniuses are full of original associations. The subject of thought

once started develops all sorts of fascinating consequences. The attention is led along one of these to another in a most interesting manner, and the attention never once tends to stray away. In a commonplace mind, on the other hand, a subject develops much less numerous associations; it dies out then quickly and if the man is to keep up thinking of it at all, he must bring his attention back to it by a violent wrench."

Practice and repetition.—The ability to improve by practice is apparently slight among feeble minded children, many repetitions being required in much the same way as in the training of animals. Normal children can improve readily by practice and fewer repetitions are necessary, while the genius improves so rapidly by practice that if repetition is required at all it is at its minimum. One way by which a habit may be established is by the shock method—where one decisive experience is sufficient to fix a habit. May it not be possible that precocious children, having a very sensitive nervous temperament, form more habits in this way than do their more phlegmatic companions? Stimuli which might affect them profoundly, causing an intense initial reaction, might not be perceived at all in the feeble minded child, or if perceived might lack sufficient strength to produce more than a slight reaction. This then would help to account for the very rapid learning and retentive ability of the genius.

To be able to disintegrate habits is of as much importance to a genius as to establish them quickly. Darwin was constantly producing new hypotheses and giving them up just as readily when new data showed them to be inadequate. (13) A mind incapable of this can never advance as rapidly as it otherwise might.

"Improvement through experience," as Professor Brooks has said, "is not equally distributed among men; some discovering through a single experience what others fail to find out after a lifetime of experience, for no one can profit by experience without the machinery for so profiting." (7, p. 7.)

In assisting his master in the painting of San Giovanni baptising Jesus, Leonardo da Vinci painted an angel which was so much superior to anything else in the picture that the master gave up then and there and declared he would never paint again, since a mere child could surpass him, as already stated. (57)

While a feeble minded child is especially weak in power of discrimination it is one of the strongest characteristics of a genius. A normal child holds an intermediate position between the two extremes. The feeble minded child is bewildered by complex machinery or situations, while the genius can at once select the elements which help to explain what he is thinking

about. From all that comes into his life he sees keenly the essentials, the significant, and is not concerned with the accessories.

Colvin states it in this way: "Reasoning correctly is essentially a matter of genius. Out of the enormous mass of seemingly irrelevant material the great thinker selects these elements that lead to his hypothesis and reveal ultimate facts. The essential thing is to single out significant facts." (12)

Persistence.—Of this trait in general, Whitby says: "Persistence in a given course of activity is conditioned by the pleasurable accompaniment of a sense of difficulties overcome, of some kind or degree of success. Thwarted efforts tend to be relinquished in favor of others where issue is or seems likely to be more favorable." (59)

In persistence again we find the greater possible difference between the feeble minded child and the genius. The feeble minded child not being able to concentrate its attention can not busy itself long with any one matter. He desires to change from one place to another, one subject to another and like the rolling stone which gathers no moss, his roving attention gathers but little information.

The reason for this, as suggested above, is that the apperceptive mass is so slight that there is little with which the child may connect new ideas.

"But turn to the highest order of minds, and what a change. Instead of thoughts of concrete things patiently following one another in a beaten track of habitual suggestion, we have the most abrupt cross-cuts and transitions from one idea to another, the most rarified abstractions and discriminations, the most unheard of combinations of elements, the subtlest associations of analogy; in a word, we seem suddenly introduced into a seething caldron of ideas where everything is sizzling and babbling about in a state of bewildering activity, where partnerships can be joined or loosened in an instant, tread mill routine is unknown, and the unexpected is the only law. According to the idiosyncracy of the individual, the scintillations will have one character or another. They will be sallies of wit and humor; they will be flashes of poetry and eloquence; they will be constructions of dramatic fiction or of mechanical device, logical or philosophic abstractions, business projects, or scientific hypotheses, with trains of experimental consequences based thereon; they will be musical sounds, or images of plastic beauty or picturesqueness, or visions of moral harmony. But, whatever their differences may be, they will all agree in this—that their genesis is sudden and, as it were, spontaneous." (28, p. 248.)

The persistence of the normal child is much greater than that of the feeble minded and varies up to the borderline of the marvellous development of this characteristic in many geniuses.

One of the best instances of this persistence is Darwin's

work on the Origin of Species. For twenty years he worked upon this theme before it appeared in print. All he observed on his travels and all that he read was helping to formulate this theory so that when it did appear and criticisms began to come in he had foreseen them all and was ready to meet them.

A Hint at Classification

In these cases cited, what part did heredity play and how much may we attribute to environment and especially educational training? It is not easy to separate these influences for two reasons.

1. We do not know yet all the possibilities of inheritance.
2. The educational training was so arranged as to lay special emphasis on the lines in which the parents were proficient—the lines of least resistance if heredity counts.

First, let us select those cases where the education received was so different from the parents' ability that we may hold training responsible for a larger part of the results

Nothing is stated regarding the parents of Viola Olerich, so we may suppose they were not persons of unusual intelligence. Then, too, in order to test the theory of Prof. Olerich, he made no attempt to adopt a child of extraordinary promise.

Heinrich Heineken was the son of a painter, and it is not probable that he was versed in languages or full of educational theories, especially as a teacher was provided for the wee child when his precocity first became noticeable.

Otto Pöhler made remarkable progress, but from his father's business as head butcher the son can hardly be supposed to have inherited taste for literary subjects.

In all of the other cases there is large probability that heredity played an important part, though this does not mean that without the training they received the children would have accomplished all they did. Without the training they might have done far less; on the other hand, what they did do might have been of far more value.

How very closely some children have followed the chief interests of the parents. The little Stoner girl especially dveloped on the social and poetic side, her mother so too; John Stuart Mill had the same broad interests in political economy as his father; Goethe the perfected literary insight and imagination of his mother. Lord Kelvin's ability as shown in his magnificent work in physics was closely related to his father's mathematical tastes. Indeed, Galton says that great scientists are more often closely related to mathematicians than they are to other scientists.

Adolph Berle at the age of fourteen years was in the Har-

vard Debating Society and was sent as a delegate to the Yale debate. This at once suggests his father's ability as a speaker.

We can not believe that training was the only factor of importance. Heredity must have played a part, though in just what proportion is an open question. Galton (18) says:

> "Those teachings which conform to the natural aptitudes of the child leave much more enduring marks than others. It is in fact just those things which a child learns in its first few years and from its parents whose qualities in some respects resemble its own, which are most likely so to conform with its own predisposition. This fact obviously increases the difficulty of determining how far a given tendency persisting through life does so solely in virtue of its own original strength, how far also in virtue of its parental and other encouragement and guidance bestowed at a favorably receptive stage of development.
>
> "It also justifies the assumption that no training however early, judicious, and persevering, will in itself afford a full explanation of the extraordinary achievements of its recipient. A mediocre individual will remain mediocre to the end of the chapter; for you can only educate previously existent faculties, you cannot, non-existent, nor probably, greatly strengthen rudimentary ones."

Though all alike in the respect of having received careful education from early youth, how different were the general conditions. There are all gradations from the constant pressure in the education of Viola Olerich, Heinrich Heiniken, Norbert Wiener and William James Sidis, to the freedom and opportunity for development of physical perfection and character in the cases of Goethe, da Vinci and Kelvin.

Many were educated according to well defined theories, and these theories, though worked out at different times by different men, were much the same. They were all based upon interest, observation, attention, suggestion, concentration, and an early development of judgment.

The wisest application seems to have been in the case of Karl Witte, where the child did not at all realize that he was being educated. All the efforts were so natural and so varied that a larger number of brain cells than usual must have been developed, and by appealing to so many areas much less fatigue was produced.

Musical and mathematical prodigies form an independent group; for in most of these cases it is the perfection along one line at the expense of everything else that explains the rapid progress.

In many instances mathematical prodigies have developed among isolated people, where there was little distraction and little to take up the attention, as among shepherds and people of limited intelligence. These children are largely self-educated, and the progress comes about by developing larger and

larger units and by memorizing amounts which would have little interest for most of us.

Musicians are not usually such isolated characters as are the mathematical prodigies, but their predisposition for music is so much stronger than their taste for other subjects that all else is neglected. In a great number of cases the ability seems to be inherited. At one musical gathering one hundred and twenty musical members of the Bach family were present.

Mozart, it is true, was remarkable by nature but his training was remarkable also. His biographer says of him: "Mozart was by nature a genius but almost as remarkable as his own native ability was the extraordinary manner in which his father developed and perfected it.

His handwriting was small, neat and always the same, and when a thing was once written down he seldom made alterations. His wife at one time said: 'He wrote music as other people write letters.'" (20)

Pedagogical Aspects of Precocity

Of the geniuses selected for this study all were unusually bright and precocious children—by no means a universal condition of genius. Other examples of this precocity are: Browning, Pope, Tennyson, Macaulay, Bryant, Dante, Handel, Spohr, Liszt, Verdi, Mendelssohn, Schubert, Wagner, Brahms, Bach, Meyerbeer, Joseph Hoffman, Corot, Murillo, Raphael, Turner, Pascal, Kant, Hume, Schopenhauer and Bacon. Among scientists the devotion to one line of work to the exclusion of others has often made geniuses seem as if they were dullards, as the fruits of their labors were not so apparent at an early age.

Davy was considered an idle dog and incorrigible. He kept his teacher in terror by the constant explosions which took place in the attic, where he was playing with chemicals.

Darwin says of himself: "I have been singularly incapable of mastering any language. . . . I believe I was considered by all masters and my parents a very ordinary child rather lacking in intellect." He was rebuked for wasting his time on such a subject as chemistry.

Newton was a sober, silent, thinking lad, averse to out-door sports. He spent his time from the first constructing wind mills, water wheels and finding out what forms of kites worked best.

Galileo constructed toys when a boy. He discovered the beats of a pendulum to be isochronous when still a boy though he had never studied mathematics.

Many geniuses in diverse lines were considered dullards in their childhood or youth—as Linnaeus, Humboldt, J. von

Liebig, Pasteur, Watt, Fulton, Schiller, Heine, Scott, Goldsmith, Beecher, Rousseau, Froebel, Whistler, Patrick Henry and Poe.

Indeed in some ways it seems as if the so-called dullard has quite a fair chance to become a genius; for time has been allowed for his physical development, a matter not carefully enough attended to in children of unusual mental ability. The new educational theories claim to include physical training but the results show a woeful lack, and if the mental strain is continued well on into the teens and the physical development retarded there is good reason to expect a reverse so that the precocious child may become the dullard or more frequently merely mediocre.

To surfeit a child with information at too early an age may bring a distaste for it rather than a desire for more.

I am not contending against educational training for young children, but against its excess. It is too one-sided—just the mental being emphasized when the development of character and physical strength and skill are what should be aimed at. It is like converting little folks into grotesque shapes such as Japanese ornament trees, by clipping here and checking there and permitting the poor dwarfs to grow only in the direction the fancier chooses.

Prof. O'Shea (37) has made a study of precocity and makes the following statements:

"It requires a higher intellectual ability to understand and react toward human beings than to solve problems in arithmetic. Is not the child wasting time doing these things? One can take his time to do problems, they will not change, but the proper reactions to parents, brothers and sisters, etc., are ever varying. One who has pets knows how to deal with them appropriately to their main distinguishing traits and he will modify his action towards them. This form of learning is much more wonderful than learning languages.

"The mind of a prodigy is stimulated in unusual instead of usual lines often to the exclusion of ordinary things. In general these prodigies are inferior to usual children in understanding generalities and especially in inventive ability with regard to natural environment.

"Not books but realities should constitute the earliest nourishment of the mind.

"The real teacher is one who helps the child to understand what he sees about him."

The following passage from Hirsch (23) is also in point:

"Rapidity of development can afford no indication of later mental powers. Precocious children not always develop great mentality nor do backward ones necessarily remain dull. Far more important than rapidity of mental development is the uniformity of formation of the different psychic factors. Mental degeneracy does not neces-

sarily imply a small degree of general development. It most consists of a defective proportion of the different mental elements, and a disturbance of outward balance."

Psychiatrists especially fear all precocious and unrelated developments. Again to quote from Hirsch: "The correct proportion of the impulses to the inhibiting intellect, the equilibrium between understanding and the feelings, is what education should strive for. . . . Rational education must aim chiefly at a uniformity of mental development," and special attention must be paid to children who show any lack of balance. (23)

Dorland (15) informs us that "precocity may mean premature senility. There is a period of antenatal growth known to the scientists as the senile period embracing the fourth and fifth months of prenatal existence. It has been found that a slight arrest of development at this period is characteristic of a class of beings known as degenerates, and precocity is recognized as one of the expressions of this developmental defect.

There is a precocity dependent upon parental influence and unconscious infantile imitation. There is need of close parental supervision to avoid brain tire and to keep mental and judicial balance."

Some maintain that education is everything, that any child properly trained may become a genius. If all impressions were withheld from a child he could not possibly become a genius, for all mental action would be at a standstill. He would have nothing to build upon. Can an idiot, on the other hand, be transformed into a genius by any amount of training? (23)

Galton (18) expresses his idea of development of ability in the following passage:

"It is, I believe, owing to the favorable conditions of their early training, that an unusually large proportion of the sons of the most gifted men of science become distinguished in some career. They have been nurtured in an atmosphere of free inquiry and observing as they grow older that myriads of problems lie on every side of them simply waiting for some moderately capable person to take the trouble of engaging in their solution, they throw themselves into the field so peculiarly tempting. There are hundreds of students of books for one of nature, hundreds of commentators for one original enquirer."

Ability has its limitations and we can not expect or desire to have every child a genius. The same is true through all the stages of development as suggested by Dr. Bair in the following passage:

"Every creature inherits a born structure which limits its ability to learn. Every young animal has certain capacities which determine its future. These capabilities are in terms of possible nervous con-

nections and brain plasticity. In the lower forms where there is but one nerve fibre to conduct the impulses, the reaction is limited to one definite response. In the higher forms the impulse has a number of possible paths open to it through the brain and which one it will take depends on habit and experience." (2)

A boy of real ability is almost entirely independent of the education he receives at school. He does not want a master continually assisting him over difficulties and doling out amounts of work to be done.

He is extremely receptive, absorbing much from mere hints. The best the master can do for such a boy is to leave him alone, just directing a little here and there, and checking any desultory tendencies. (18)

Ostwald (38), in his study of great men, has noted particularly the way they react when young to the school and school work. In most cases he has found that the men of genius have either reacted vigorously against the school or perhaps been expelled, or else they have received apparently little help from it.

"Correct teaching," says Cramer, "makes the student a continuous discoverer, and any method which fails to do this is not good." (13) Not only must a child think, he must do. From doing comes the greatest satisfaction, and from something well done the child receives the stimulus of success, which is of the utmost pedagogic value. Every complete experience must be motor as well as sensory.

Mosso tells us that: "No more time should be devoted to intellectual work than to muscular exercise. The modern education of youth, however, resembles more an artificial hothouse culture than a natural training of the human plant." (30, p. 384.)

Physical education and gymnastics serve not only for the development of the muscles but for that of the brain as well. If the Greeks excelled all other peoples in genius it was because they paid more attention than did the others to bodily exercise. (30, p. 390.)

In his little book on the "Making and Unmaking of a Dullard," Shields points out that: "There is no surer way to defeat all the purposes of education than to cram book learning into a boy's mind before he has any desire or capacity for such knowledge and while all his being is crying out for the elemental things involved in sensory motor experience." (45)

The mental relation of intelligence and movement is one of the most constant factors in nature. The more mobile the extremities of an animal are the more intelligent it is. The movements always change when the intelligence changes. One can often recognize the degree of intelligence of a person by

his gait. Artists are able to show in pose of bodily position the effects of different emotions. (30, p. 393.) Many of the artists of the Renaissance were at first goldsmiths or artisans in several lines. They knew how to do many things with their hands.

Motor development is more fundamental and older genetically than mental. Our intellect has developed through activity; and attempts to do away with the motor foundations and build only a superstructure are dangerous and only of temporary value.

If we believe at all that man has arisen to his high mental level through making more and more use of his fore paws, we can hardly advocate his attempting to reach the very highest level by reversing the process and allowing them to atrophy. A few psychologists and educators and many parents believe that by continuous work begun at an early age a child may put more into life and get more out of it than in any other way; but on the other hand, most psychologists, psychiatrists, physicians and educators see grave danger in the crowding process, and it is high time for parents to see the matter from all standpoints before the fatal mistake is made in their own children.

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In No. 18 a list of British Geniuses is given and in No. 48 an extended bibliography on the subject of precocious children containing many titles which do not appear in the one given here.

A CRITIQUE OF HIGH SCHOOL LATIN

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I

The Psychology and the Educational Ideal of the School Text Book.

"Books are the Means, not the End."

Words transmit perceptions to the mind visualizing scene, conversation and scientific exposition. Down the printed page, scanning successively line after line, the eye makes its habitual series of jumps from the right hand end of the visioned line to the left hand beginning of the next line. Ofttimes in a veritable twinkling the eye moves—left to right and twitches back—till the whole printed gridiron of the lettered page is felt as sensation, recognized as perception, and assimilated as apperception; that is, a new page of imaginative description or scientific fact is associated with the content of previous knowledge. In a nutshell, this is the mechanical psychology of the school text book.

From the point of view of anatomy books train only this jerky movement of the eyes following the printed lines down the page. Hence its requires not so much the collegiate knowledge of the trained psychologist but rather only the common sense of the man or woman in every day life to feel sure that the better subject of instruction in school for the needs of the growing child is a subject which employs not only the book-jerk motions of the eyes in reading down the printed page but also many of the other natural adjustments of the eyes, as well as movements of arms, legs, body and the entire muscular system; feelings of heat, cold; impressions of touch, weight, lightness, smell, pleasure, pain; and so on through all the other processes by which knowledge of the outside world is gained.

Such a subject of instruction is better than the mere book because it is more than the mere book; it is all the knowledge of the mere book plus something else, plus some other facts of observation, or some other practical training. In this respect the study of the piano affords more liberal training than the study of Latin; for the latter trains only the brain and a special series of eye muscles, while the former includes

training of the ear, hands, arms, feet and body with the result of a social accomplishment and a possible future vocation. The monopoly of the printed book by prohibiting change and variety in the visual range is undoubtedly one of the main causes of eye glasses on school children.

The ideal study is the book plus the stereopticon, the book plus the laboratory, the book plus the auditorium, the book plus the excursion, the book plus activity in life. Ideal school books presenting facts of the past must throw a direct, intense, practical, useful light on affairs of to-day; they must teach not only "To know" but also "To do;" they must point to possible vocations.

II

The Failure of High School Latin to be Readjusted to the Progressive Educational Ideal.

"Studies are like Leaves
Some Wither Every Year."

The progressive educational ideal for the evaluation of studies today in the twelfth year of the civilization of the twentieth century has now been defined. Teachers and professors of Greek have given no heed to this ideal, and so Greek has practically departed from the high school curriculum, never to return. As yet no tendency has appeared among colleges or high schools to readjust the study of Latin to modern life in accordance with the educational ideal. The natural consequence is that Latin is fast following in the vanishing footsteps of Greek and deservedly so.

Any teacher who maintains by magazine article or private conversation that the study of Latin is not rapidly dying in the American public high school is either blind to the drift of educational tendencies or is like the small politician always verbally sure of election during his campaign speeches. He is a mere mouthpiece for educational white lies. Latin unless usefully readjusted to the needs of the twentieth century will be removed from the high school curriculum in the immediate future by the process of the survival of the fittest, just as the similar subject Greek, and just as deservedly.

Teachers and professors of History have been far more provident and progressive. They have adapted history in accordance with the changed relations of modern society. Not many years ago history was almost entirely a chronological recital of wars, kings and conquests. Today history occupies itself with commerce, law, business, social conditions, natural resources, art, literature and religion. The history of past events is looked at in the mirror of present relations of

society. History has been readjusted so that it is useful, illuminating present problems with light from the scenes of the past. History in the crowded lecture hall is popular, receiving honor properly due.

Contrast with this flourishing condition of history the impoverished status of Latin study. Observe the decadent condition of Latin in a large New York City high school in the business section, enrollment 1,800 boys. Latin is an elective study. One year satisfies the great majority of high school boys that Latin will not benefit them in life; for 66% drop Latin after one year, and 98% of all who elect Latin the first year drop the subject after two years, that is, after reading Caesar.

Such is the impression and opinion which many students get of Latin even while in the high school course. And a single high school or college graduate in the actual pursuits of life who reads Latin either for profit or pleasure can scarcely be found today. The English book or the botany, the chemistry book or the history, the French book or the physiology is not infrequently picked up after graduation for reference. But the Latin book reposing in the dust of the book shelf is treated as a text book to be used during the high school days alone. Especially from college graduates is heard the declaration that Latin is a dead language, of no real good to a live boy or girl, a mere study of words, and words too that do not convey any content of useful information for modern life, a fossilized memory drill of dead bones!

III

The Stock Arguments of the Stand-Pat High School Latinists—Discipline and Culture.

"A Stern Discipline pervades All Nature"
"Culture reaches from the North Pole to the South"

The arguments of the advocates of the present High School Latin course may be summarized as follows: 1, Discipline; 2, Culture; 3, Latin for English Words; 4, Latin for Use in the professions of Law, Medicine, Theology and the Sciences.

The first argument, that of discipline, is too broad to be treated in any discussion less comprehensive than that contained in a separate volume. In order to discuss the discipline conferred by the study of Latin—and it does give a peculiar literary discipline just as every duty or business in life casts upon us the peculiar discipline of that particular pursuit—we must first define, describe and determine the exact meaning of the word, "discipline" when applied to the studies

of the high school, a task knotty and difficult for even the most learned of American educators; so difficult, in fact, that no comprehensive, thoro-going and satisfactory discussion of the meaning of the word "discipline" as used so glibly in private conversation by American teachers with regard to high school studies has yet been written.

When a high school teacher tells you that the value of his subject of instruction is discipline, he is hiding behind a vague generality. Ask him to explain what he means by discipline. Request him to enumerate the details out of which the discipline of his subject of instruction is made. A professor or teacher who tries to estimate the value of any school subject as discipline within the narrow limits of one page of a magazine article or within the confines of an hour's private conversation may be likened to an imaginary teacher who should try to convey the idea of an elephant to a small child by holding up one square inch of the elephant's ear.

Latin is but one subject in a great educational book of the future comparable to Bryce's American Commonwealth in politics, and entitled: Language Discipline in Education, in which Greek, French, German and English each occupy a lengthy section of detailed and technical argument. Discipline is a general effect of all studies and is not gained through any one study alone. Latin gives one quality of foreign language discipline; French another, and German yet a third.

All that the most advanced educational thought of the present day will allow us to say in reference to discipline is that Latin does not give any general discipline at all; for no one subject can give us general discipline. Each subject gives us the peculiar quality of discipline inherent in that one subject; and Latin being one of the foreign languages taught in the high school gives a peculiar quality, one particular quality of foreign language discipline. Just what that quality of discipline is has not yet been ascertained. That is all we really know about the value of Latin as educational discipline in the high school.

The second argument, that of culture, is as broad as the first, that of discipline, and also needs a separate volume for its adequate description. Culture, too, is an abstract word and like discipline pervades the entire massive and complicated machinery of education, from the kindergarten to the professional school. Does culture reside in a word or phrase or sentence or paragraph, or even in an entire book? Or is not culture something altogether external of which printed books are but the footprints on the sand? Certain persons are called cultured. Is the culture of a person

identical with or similar to the culture of a book? If so, which is the fountain head or source from which true culture springs? Finally, what is the peculiar quality of culture that resides in languages as a whole and how does that quality of culture conferred by Latin discipline differ from the culture conferred by the other high school languages of French, German and English?

Any discussion of the value of Latin culture that is to be either of any real use or of any marked influence on education must be as broad-minded, many-sided, and practical as was Adam Smith's Wealth of Nations. Latin culture as well as Latin discipline is a small spoke of peculiar grain in the great wheel of universal culture found in the choicest books, discourse, peoples and lives of all nations; culture and discipline are not confined to the Latin language or the Latin literature; culture and discipline are obtained from the study of every subject in the high school course.

All that can truthfully be said of the value of culture in high school education today is that each subject of instruction gives a special culture; and that educators in general have reached no agreement as to what grouping of subjects will tend to turn out the greatest percentage of cultured high school graduates.

IV

A Valid Argument for Latin Study in the American High Schools,—English Words.

"The English Dictionary is Two-Fifths Latin Words."

The third argument of the advocates of high school Latin study, that the study of Latin words aids in the knowledge of English words, is a sound, practical argument, worthy of attention. The structure of the English vocabulary has not yet been accurately investigated. We do not find any finished comparative view of its component parts; by which we mean, on the one hand, those words derived from the Saxon, German and French and, on the other hand, those words derived from Greek and Latin.

The contributions of the Latin language to the English are next in importance and amount to those of the Anglo-Saxon and these Latin-English words came in the beginning chiefly through the Norman-French in consequence of the capture of England by William the Conqueror in the year 1066 A. D. These words while appearing much less in proportion on a page of an English book than in an English dictionary are highly important, entering extensively into the derivation of our English words. The Latin has served not only to refine

and polish the English speech but also to enrich the English vocabulary. It has furnished duplicates or synonyms of many words, adding much to fine shades of meaning and harmony of expression. Latin has furnished a large portion of the abstract and general terms in politics, ethics, theology and philosophy; the number of Latin words introduced into the English language during the last fifty years in consequence of the extension of such sciences as chemistry, mineralogy, geology and botany has been very great.

A year's study of that mass of Latin words common to English cannot fail to be a valuable help as an auxiliary course to the study of English in the first year of the high school; for one-fifth of all the words in the English dictionary came into our language through Norman-French and another fifth of all the words in the English dictionary represents pure Latin words borrowed into our English tongue from the Latin.

V

A Critique of the Present High School Latin Vocabulary—Of Very Little Use.

"Latin words fly up, English thoughts remain below,
Words without thoughts never to Heaven go!"

Acknowledging, then, that the only sound basal argument for the study of Latin in the high school, the fundamental argument upon which all arguments of discipline and culture must rest, is that the student may improve his knowledge of English words by making a special study of those Latin words which are most common and useful in English speech, let us examine the present high school Latin course to see whether the Latin words studied in the American high school are the most important and useful Latin words which have become incorporated in the English language.

In 1909 appeared the revised edition of the "Vocabulary of High School Latin" from the press of one of the greatest universities of America. This collection of 2,000 Latin words, which was at once received with great favor and today is the recognized standard of Latin vocabulary for high schools, may well be the list from which we can form a judgment as to the kind of Latin words our boys and girls are studying in American high schools.

In 1912 at another large American university appeared a parallel list entitled the "Vocabulary of Practical Latin," being the 2,000 most important, scientific, professional Latin words in the English dictionary. These two lists are the sources from which we may come to a decision as to the value of the Latin words studied in the American high school.

The Practical-Latin list in the introduction announces as its purpose the publication of the 2,000 most practical, scientific Latin words appearing in the English dictionary.

Let us now read the preface of the Vocabulary of High-School Latin. I quote as follows: "The trend of thought during the last thirty years with regard to the teaching of Latin has been . . . The beginners' books have become more and more books introductory to the study of Caesar. The vocabulary, likewise, has been taken almost entirely from Caesar . . . the practice of beginners' books in confining their vocabulary mainly to Caesar is abundantly justified . . . I have divided this list into three parts of approximately 1,000, 500 and 500 words. The 1,000 words printed in bold-faced type contain the words of most frequent occurrence in Caesar. They should be learned by the end of the Caesar year, 500 having probably been learned the first year."

Such is the ideal of Latin study announced by one of the greatest American universities. Think of it! Can it be that 1,800 years after the death of Caesar the 500 words of most common occurrence in the four books of his Gallic Wars are the most useful, cultural, disciplinary, the most important Latin words for American boys and girls to learn in the first year of the high school? Certainly not, unless by a miraculous coincidence of fate. Could that great general and practical statesman realize that the 500 words which appear mathematically most often in his first four Gallic Commentaries, regardless of their use or worth to the English language, are set up as the standard vocabulary of beginners' Latin books in America in 1912, the very ghost of Julius Caesar would condemn such a narrow educational policy for the study of Latin.

Would that a chime of clarion bells ringing down the whole gamut of the musical scale would resound the astounding fact that the vocabulary of first year Latin in the American high school is an antiquated list 1,800 years old of the 500 words mathematically appearing most often in Caesar's Gallic War. O senseless collection! And shame to American scholarship because so unthinking!

Conversation, criticism and public opinion of American fathers and mothers should compel the vocabulary of Latin in the first year high school to be a new list of the 500 Latin words of greatest value in present-day English grammar, science and profession.

What are the causes, forsooth, that have produced this perverted method of vocabulary selection in first year Latin? Undoubtedly the prime cause is the examinational system. Now examinations properly employed standardize teaching

throughout a state. But when the examination paper is made the chief aim, it means that the educational value of a subject is being neglected. This is what has happened in first year Latin. By drilling first year pupils exclusively on the 500 words in Caesar they read that author more easily the next year, passing better examinations. The examination in Caesar is the only goal that American educators seem to have in mind when selecting the vocabulary of first year Latin.

When reading in the history of education—a subject that should be taught in every American high school, since public education is confessedly the foundation of true democracy—that such questions were discussed in the Middle Ages as: (1) "How many angels can stand on the point of a needle?" (2) "Can God make two hills without the intervening valley?" (3) "What happens when a mouse eats the consecrated host?" we laugh with derision. But truly the method by which American professors and teachers today select the Latin vocabulary of the first year high school is 350 times more examination-hide-bound, sordid and stupid.

Next consider the character of Regents' Latin examinations of New York, the 204th high school papers in First Year. Caesar, Cicero and Vergil, with reference to the meaning or derivation of English words. It seems incredible to state that not one question from all four papers can be found in regard to the derivation or meaning of English words. Yet such is the fact! When New York, which has without question the best system of examinations in the country, fails utterly to lay any emphasis on English derivation, the Latin teacher cannot be expected except incidentally to teach his class the meaning of Latin-English words. Strange to say, however, there are questions on the force of the terminations of Latin words.

This educational error is revealed in the introduction to the Vocabulary of High School Latin where twelve pages are devoted to the composition and formation of Latin words and not one page is devoted to the composition and formation of English words derived from Latin. In passing it should be said that the derivation of Latin words is useful only during the four years of the high school course while the composition and formation of English words from their Latin ancestors would be of great service all through life. This is but another glaring defect in the present, perverted conception of Latin study and only goes to substantiate the statement that Latin is taught blindly today. The aim and goal of the present method of Latin instruction in American high schools is not Latin for the sake of English but Latin for

the sake of Latin—and that Latin, too, which existed in the days of Caesar, Cicero and Vergil, almost 2,000 years ago.

Let us next examine the quality of Latin words appearing on those four high school examination papers of the Regents of New York. A careful analysis shows that only 16% of the Latin words represents words of use in English while 84% are concerned with the unrelated language fabric of the Latin tongue. This wretchedly low percentage of useful Latin words in the examination papers is proved to be a fair index of the present high school Latin course by an analysis of the words in the Vocabulary of High School Latin. Among the 2,000 Latin words recognized today as the standard vocabulary for high schools only 246 are useful to understand the meaning of English words and science.

And that is not the entire story. Many Latin words taught in the high school are a decided detriment because the meanings they originally possessed in Latin are far different from the meanings they now possess in modern science. Consider the following examples. The English word "opera" denotes a drama of which music forms an essential part, while the student in the American high school learns the meaning of the word "opera" only in the old Latin sense of "work or labor." The word "focus" in physics today means the point at which reflected rays of light meet; "focus" in high school Latin means only a "fireplace" or "hearth." "Ratio" in algebra today means the proportion of one thing to another, as $\frac{A}{B}$ or A:B, while in high school Latin today "ratio" means only "thinking or reasoning." "Impetus" in physics today means the momentum a body acquires in motion, while "impetus" in high school Latin today means only a "charge or attack of soldiers." The study of such Latin words in high school does not improve our knowledge of English words because the antiquated meanings have to be discarded and the vastly different modern meanings must be learned when these words occur in physics, algebra, music and business life.

Allowance being granted for even this group, an analysis of the words in the Vocabulary of High School Latin classifies only 12% in modern, scientific Latin-English and 88% in the unrelated Latin tongue. In brief, our boys and girls in the high schools are studying Latin 88% of the time for the sake of Latin words and only 12% of the time for the sake of English words. American fathers and mothers, when you are called upon to decide whether or not your son or daughter shall study Latin in the high school, remember that of all the 2,000 Latin words they will learn only 246 will be of any possible use to them.

The original sin of this educational evil in the selection of Latin vocabulary was probably imported from Germany. American educators have learned much from German education. Yet it would be well to adopt only superiorities, not slavishly to copy German educational methods in their entirety without adaptation to American educational conditions. In the preface to the Vocabulary of High School Latin may be found these words: "Nearly a century ago Prof. Fleckeisen prepared a Latin vocabulary arranged in five groups according to frequency of occurrence, and that book is still used in Germany and elsewhere." Whether this purely mathematical method of choosing Latin vocabulary is best for Germany, can be answered only by Germans conversant with the conditions of German schools and society. But to transplant such a system to America without readjustment to the needs of the English language is rank educational folly.

Let us now look at the vocabulary of the present high school Latin course from the point of view of content or information. The most valuable characteristic of every subject of instruction in school and college should be the amount of knowledge the subject gives the student. In the present vocabulary of high school Latin the words really of value from the point of view of information are in the ridiculously small proportion indicated below: medicine, architecture and mathematics, 1 each; physiology and botany, 3 each; zoology and anatomy, 4 each; chemistry, 6; law, 7; astronomy, 9. Less than 50 words out of the entire 2,000 of the present high school Latin course are of real use to the boy intending to select a professional vocation! When a total of only 8 words appear from the vocabulary of anatomy, physiology and materia medica, does a boy need to study Latin in order to enter upon the study of medicine? Certainly not. When only 7 useful words appear from the vocabulary of law, does a boy need to study Latin in order to become a lawyer? Most assuredly not. When only 6 useful words appear from the vocabulary of chemistry, and only 9 from the vocabulary of astronomy, a boy does not need to study Latin for these professions.

Finally, let us compare the two lists entitled the Vocabulary of High School Latin, the present course, and the Vocabulary of Practical Latin, those really useful words found in Webster's dictionary. The amazing fact is revealed that out of the entire 4,000 Latin words of the two combined lists only 99 are common to both lists! American educators and teachers, just think of the fact that only 99 words out of the entire 2,000 Latin words in the present high school course are

useful from the point of view of conveying to the student any valuable scientific or professional knowledge.

Such is the remote relation that exists between the vocabulary of high school Latin taught in America and the vocabulary of scientific Latin appearing in the English dictionary. There is but one conclusion; the Latin words studied in the American high schools are of comparatively little use either as regards understanding English words or as a preparation for the study of the sciences or professions.

To sum up, if it is true that the fundamental reason for studying Latin in the high school, the foundation stone upon which all arguments of discipline and culture must rest, is the study of that large mass of important English words which have come into our language from the Latin, and if it is also true, as the statistics of this essay show, that only about 100 of the 2,000 Latin words studied in American high schools are worth studying because they throw light and information upon English words,—the inevitable conclusion must be that one now emphatically declared entirely in accordance with the present drift and tendency of educational thought; namely, that the Four Years Latin Course of the American High School is today of very little comparative use: fundamentally because the 2,000 Latin words studied in the American high school do not at all fairly represent the Latin element in English speech, and secondarily because any considerations of discipline and culture reared on such a false foundation are altogether artificial—an indication of the decay of sound learning.

VI

College Entrance Requirements are Unjustly Criticized.

"One High School principal is a Disciplinarian,
Another is a compiler of Dead Statistics,
A third might be the scholarly author of Practical Text-Books."

The American High School next to the college is acknowledged the greatest force in this country for the upbuilding of better men and women. Yet the high school may be likened to a great manufacturing plant in which the greater part of the work is flourishing while some methods and some machines are working badly because not readjusted and remodeled, with modern devices of the last fifty years. When the condition of these machines is made clear to him, the manufacturer does not order them to be thrown out and that line of goods to be abandoned. Instead he institutes the most

modern equipment and continues to manufacture as long as there is a demand.

An exact parallel is found in education in the American high school. There are several subjects, a half dozen at least, which fairly resemble the worn-out, unrepaired, badly-working machines of some great manufacturing plant. Of these Latin is without question the most rusty, unproductive, and least adapted to modern life. But this antique machine, the present high school Latin course, cannot be thrown out of the educational plant entirely, and all at once. There is still a demand on a small part of public opinion.

In education even more than in a great business it is necessary that all change should be gradual. Great bodies, public opinion and especially action in educational affairs move slowly. It is well that such is the case. Thus fads do not become established since innovations must begin by a one year or even a half-year course. In this way Physics and Chemistry as well as all other modern subjects have attained their standing and in this way all future subjects must win their place in the high school curriculum. Yet in perfect frankness the undoubted fact may be stated that the American high school has erred rather in being the last to lay the old aside than in being the first by whom the new was tried.

At the present time the American college is receiving from educational discussion among principals, high school teachers and superintendents cannonade after cannonade of hostile criticism alleging that the college entrance requirements have a baneful influence. The failure of American high school teachers to adapt the subjects of instruction to the needs of non-collegiate students is laid entirely at the door of the college through its admission requirements. General criticisms of great educational systems and extensive commercial enterprises are both easy to make and difficult to refute because involved in such a complexity of social organization. Rather let us examine the specific case of Latin alone, determining whether the college professor or the high school teacher is blamable for the educational waste caused today by the maintenance of the antiquated four year Latin course.

Sound is the principle that any new subject introduced into the high school must begin with a one year course and after having proved to the public its usefulness may be extended to two years or even more. Sound also is the principle that any out-going subject of high school instruction must be diminished only a year at a time over an extended period until there is no further demand. Moreover, as only a small percentage of American parents are financially able to send their sons and daughters to college—the greatest defect of

American education and society today—at least 80% of all high school students are in the general courses fitting for business life. It is unreasonable to expect the college professor of Latin, occupied with the enormous field of his subject and the many duties of his college office, to devote any considerable, constructive attention to the 80% of students in the high school, usually remote both from his lecture hall and library. Any such expectation is absurd. The present time in education is a period of gradual transition for Latin just as every period has always been and always will be a gradual transition period for some one subject.

The progressive attitude of American colleges should not pass unnoticed. It may almost be said that no college today requires Greek for admission while some of the more progressive colleges are wisely and providently cutting down the Latin requirements. Bowdoin College in Maine no longer requires four years Latin for admission to the B. A. course. Three years through Cicero admit, though a year's work is required after admission. And who would not prefer a year of college Latin to a year of high school Latin? Harvard College with the foresight of sound learning requires only three years of Latin through Cicero for admission to the B. A. course and no Latin is compulsory after entrance.

Thus it is evident that the colleges are not backward, for they are readjusting their requirements as fast as is wise for the good of the schools. What, on the other hand, have principals and teachers done to readjust Latin for the 80% of high school students in the so-called general and English courses? It is sad to relate that they have done nothing but condemn college entrance requirements. If certain high school principals in addition to writing copious and caustic magazine articles and denouncing the American high school educational system in general would take some one subject in their own school and by conference with the special teacher adjust that study to the needs of the 80%, teaching only those facts of the subject directly serviceable in life, much more good would accrue to the American high school than by criticism alone and much educational waste would be eliminated.

There is no substantial reason why American college requirements should control the teaching for 80% of the high school students. Yet no one ever heard of a high school principal who selecting algebra, plane geometry or Latin, and having decided in conference with the department teacher how much of the study would prove of real use to the non-collegiate students, taught only those parts of the subject avowedly of practical value throughout a man's life.

American high school principals are concerned too much with dead statistics and the discussion of what subjects as wholes shall be taught in the schools and far too little with what parts of the various subjects shall be taught because useful. Even the subjects in best repute have undoubtedly much useless and time-consuming material in them. This is true of the subject that is so unanimously approved, the study of our own English language. If American high school principals would study and discuss in educational associations and meetings the subjects of instruction in their own particular schools not only as wholes but also in the various parts, sections and groupings in which each subject of high school instruction may be easily divided, much waste material would not appear in the school recitation and the next edition of the text book would be greatly improved.

The American high school principal and his department teachers, not the college professor nor college requirements, are responsible for the gap and lack of connection between the high school and its direct application to the business of life. The people look up to and respect the high school principals; in return the principals by scholarly activity among themselves and by working in common with the department teachers should, like family physicians, diagnose the symptoms of the various text books used in their respective schools, purge whole paragraphs, pages and even chapters of useless matter, to the end that the recitations in the rooms of the high school shall discuss nothing save that which is live, practical and useful in its bearing on real life after the days of school life are no more. When the American high school principals shall become proof-readers, if not the actual authors of the high school text books, a new light of progress will dawn on that foundation bulwark of true American democracy, the free public high school.

VII

A New Field for the Generosity of Educational Philanthropists.

"A teacher on one end of a log,
And a pupil on the other,
May constitute a school.
But a teacher on one end of a log
And forty pupils on the other
Need a good text-book."

Libraries, retirement funds, and buildings are a very necessary part of any educational system. The fact is, however,

that the backbone of secondary education consists largely in text books, that is, in printed knowledge of the past and present. In the last analysis the school text books wield an influence in education at least equal to that of teacher in classroom and laboratory. Furthermore it is universally agreed among almost all high school principals and teachers that present day text books are written more largely for the teacher than the student, from the point of view of the specialist rather than that of the schoolboy, from the abstract theoretical arrangement rather than the practical application to modern life. American high school text books need spring house cleaning.

No more valuable service could at present be conferred upon American secondary education, kindergarten, primary, grammar and high school, than the establishment of half a dozen "Traveling Professorships for the Improvement of School Text Books and Methods in Classroom, Recitation, Laboratory and Field Work." Each Professor selected because of broad, many-sided educational training and considerable actual teaching experience, as well as having accomplished work in educational research at some of the greater universities, should be assigned to a definite section of the United States, personally to visit the classroom recitations in that subject upon which the traveling board is working and to write articles for the magazines and educational periodicals of that section informing the public at large of the actual work of the classrooms as he sees it from personal observation. A record of text books used, the actual assignment of the number of pages per lesson, the methods of instruction employed and a copy of the examination papers should be carefully kept by each traveling professor.

At the end of nine months the board should convene for a month to discuss and debate the actual present day conditions of education in that particular subject, to compile and publish a report of the status of one subject of instruction throughout the secondary schools in all sections of the country, to point out defects and excellencies and by personal lecture and through the newspapers to thoroughly acquaint the public of what is actually being taught in the actual class rooms of the American secondary school. Finally that member elected by the board as best fitted for the task should be appointed to spend the following year in writing a text book or books embodying the ideas and recommendations of the board while at the same time visiting classes in that subject and soliciting advice from the leading teachers throughout the country. A thousand copies of this text book when copy-

righted should be mailed to some teachers of the subject in every state. Any school accepting the board's text book should be furnished it at the nominal cost of printing. No profit should accrue to the board from the publication of its text books.

If educational philanthropists could be convinced that the real value of American secondary education consists essentially in the school text books, discussions, debates, recitations, black board work and written work of the classroom; if a permanent endowment of $500,000 could be given for six Traveling Professorships for the Improvement of American Public School Text Books and Methods, the secondary schools of America, great and uplifting as is their mission today, would become a still greater force for truer democracy, higher character and larger truth.

VIII

A One Year Latin Course in the American High School.

"One short year of Latin words
That breathe in English speech.
Then three long years so saved
To further drink the cup of High School Knowledge."

The statistics and arguments presented above show that the study of professional-scientific-useful Latin should have a place in the high school curriculum. Not only the large percentage of pupils to be benefited, which in one large high school has been shown to be two-thirds of all students electing Latin, but also the low percentage of professional Latin in the present course, only about a sixth part of high school Latin vocabulary being scientific, warrant the establishment of a parallel one year course in Applied Latin.

The first requisite in the preparation of a new educational method in scientific Latin is the collection of vocabulary. The most prolific source immediately suggested to the mind is the professional dictionary, e. g., of law, medicine, pharmacy, botany and anatomy. But a consideration of the vocations which nine-tenths of the students will adopt, namely, the various business callings, prevents the adoption of the professional dictionary as the chief source. The works would afford, however, valuable supplementary material.

The relation of Latin to that large mass of high school students soon to enter business pursuits finds its most direct

application as an aid to a more thorough knowledge of their own English language and to the sciences and professions only in a secondary but nevertheless in a very useful degree, to wit, in so far as the nomenclature of these sciences have passed from their limited technical sphere into the common ground of English speech and general knowledge.

The English dictionary, it is contended, is the proper first source for general educational purposes. That body of words common to Latin and English naturally forms the point of contact between the ancient and the modern. Not Latin for the sake of discipline and culture but Latin words in so far as they throw light on English speech and knowledge is the goal.

In this connection the following general proposition of permanent educational method is maintained; that not only the vocabulary of first year Latin but also the beginners' vocabulary of every other foreign language—French, German, Spanish, Italian and Anglo-Saxon—in both the American high school and college should include the common element of foreign words incorporated in English and some special study from the point of view of their derivation and use in English should be taught.

However, more and more is a general knowledge of all the sciences being given in the high school. Therefore, a first year drill, in an all-science Latin vocabulary cannot fail to be helpful. Such a parallel course would tend to exert greater intensity of interest in the students preparing for college because of their common purpose. And that far larger mass of students for whom the high school is the last institution of formal training would profit

(1) by a Latin course better suited to their practical needs

(2) by a year's preparation for the study of the modern inflected languages

(3) by valuable training in the foundations of English grammar and word-derivation, and finally,

(4) by a direct knowledge of scientific Latin most intimately related to practical life.

Whether or not this educational method of adaptation finds approval, the principle that every important subject of high school instruction must serve the interests of the many as well as the few is today generally accepted. And the belief is entertained that there is nothing inherent in either the ideals or the material of Latin study to prevent its adaptation to the most utilitarian needs of the twentieth century. The problem of adjustment is a hard one to solve and deserves the attention of all Latin teachers through-

out the country. It is up to the principal and the high school Latin teachers to prepare a one year course in Applied Latin. After several years of experiment if a reputable one year book should be written, treating efficiently that element of Latin which has become incorporated in the English language, it is probable that Harvard and Bowdoin, as well as other important American colleges, would be willing to grant some credit for admission to college to such a one year course in useful Applied Latin.

VERSE MAKING IN OUR SCHOOLS

By Edward Harlan Webster, The Commercial High School, Springfield, Massachusetts.

I suppose every one that has read Macaulay's Essay on Milton, was, upon his first reading, struck with the following lines:

"Language, the machine of the poet, is best fitted for his purpose in its rudest state. Nations, like individuals, first perceive and then abstract. They advance from particular images to general terms. Hence, the vocabulary of an enlightened society is philosophical, that of a half civilized people is poetical . . . In a rude state of society, men are children with a greater variety of ideas. It is, therefore, in such a state of society, that we may expect to find the poetical temperament in its highest perfection."

If Macaulay is correct in his analogy, and I believe that he is, there is no time that is better fitted for the first lessons in verse construction than the early years of a child's school life. At the age of ten, he illustrates to a high degree of excellence certain qualities of the poetical temperament. Like primitive man, he is vividly imaginative, spontaneous in expression, essentially emotional, and rhythmic in the revelations of many of his emotions. Through his imagination, unhampered in these early days by a strong sense of reality, he is enabled to discover in nature about him all manner of poetic similitudes. Natural objects form for him, as for his early forefathers, not a mere background, but living things capable of human emotions. And he does not regard the objects of nature simply as alive, apart, to be admired, and wondered at: he thinks of them as fellow creatures:—

> "There was a Boy; ye knew him well, ye cliffs
> And islands of Winander!—many a time,
> At evening, when the earliest stars began
> To move along the edges of the hills,
> Rising or setting, would he stand alone,
> Beneath the trees, or by the glimmering lake;
> And there with fingers interwoven, both hands
> Pressed closely palm to palm, and to his mouth
> Uplifted, he, as through an instrument,
> Blew mimic hootings to the silent owls,
> That they might answer him—"

Like primitive man, moreover, the child illustrates the poetical temperament by reading into natural phenomena, simple stories of heroism and adventure, and imaginative qualities of the most varied kinds. Alone or with other children, he usually interprets nature in this wise. Spontaneity, too, is as natural to him as his very being. In his earliest years, he is enthusiastic to express the ideas that come teeming into his mind, for the shades of the prison house have not yet begun to close about him, and custom, gray with ages grown, has not weighed him down. The dream world and the real world are all one to him. He imagines, therefore, all manner of fantastic things, and delights in telling his tales, when the mood strikes him, to any one or to anything that he finds close at hand.

In no manner, however, does the child illustrate more perfectly the poetical temperament found in a half civilized people than in his feeling for rhythm. The experience of Pope—

> "As yet a child, nor yet a fool to fame,
> I lisp'd in numbers, for *the numbers came*"—

is, with poetic geniuses and savage people alike, according to Dr. Chamberlain, almost universal. Dante, he tells us, wrote sonnets at the age of nine; Wieland created an epic while yet a youth; Lope de Vega composed verses at twelve; and Poe wrote his "To Helen" while a mere boy. We usually read such statements with wonder, because in our time, we fell that he who can "lisp in numbers," "as yet a child," must surely be a prodigy! Not so among primitive men! "Children make songs for themselves," says Miss Alice Fletcher in her article on Indian Songs, "which are occasionally handed down to other generations." In speaking of African folk tales, Mr. Chatelain says of the Angola natives, "No Angola child finds difficulty at any time in producing extemporaneous song." Crawford, who translated the Kalevala, the great Finnish epic, says, "The natural speech of this people is poetry. The young men and maidens, the old men and matrons in their interchange of ideas, unwittingly fall into verse." And Dr. Chamberlain claims that "among the young herdsmen and shepherdesses of the pastoral peoples of Europe and Asia the same precocity of song prevails." During early youth, therefore, the child should receive his first instructions in verse making; for, it is then that he possesses abundantly, as we have seen, certain vital qualities of the poetical temperament,—imagination, sensitiveness to the beauty of nature, spontaneity and a feeling for rhythm.

But why should we instruct the child in a kind of com-

position he may seldom, if ever, use? There are many answers, it seems to me, to this question. In the first place, as Mr. Henry G. Pearson has said, "The ordinary school boy has come to look upon poetry as a relic of prehistoric times, to comprehend which long study and the patient training of a specialist are needed and which no longer serves any purpose except possibly that of idle amusement." If the child were trained to imitate the simplest work of the great masters at the time he is reading their ballads, or their short, direct narrative poetry, and while he is yet by nature a poet in temperament, he would soon catch the charm of such a method of telling his own stories. Poetic composition would no longer appeal to him as a form to be used only by "the specialist"—he would see that he too could cast his thoughts into verse form. The ordinary child, moreover, takes an especial delight in making rimes. He is stimulated, particularly if he meets with any degree of success, to attempt all manner of verse connected with school life and the activities about him. Some of my boys have shown unusual interest in writing advertising verse, school songs, and humorous verse dealing with the experiences of fellow classmates. Students taking both History and English, who might be at a loss if asked to write an original narrative in verse, have composed, with enthusiasm and success, "historical poems," dealing with such subjects as "The Defeat of Harold;" "The Penance of Henry II;" "The Destruction of the Armada," etc. Events thus expressed are much more likely to be remembered than if they are narrated in the usual prose form; and a new interest too seems to be correspondingly aroused in the History classes.

Verse making affects, moreover, the work done in the literature classes. I have noticed, after a course in verse composition, an increased enthusiasm among my own pupils in the analysis of such poems as the Ancient Mariner, The Prisoner of Chillon, and the Vision of Sir Launfal, as masterpieces of literature. The writing of narrative verse, it would seem, had borne direct fruits in the study of poetry for appreciation.

Probably, however, no subject is more directly helped by exercises in verse composition than reading. Many children, who read prose fluently, read poetry in a very halting fashion. I take it that all agree that naturalness is the most important requisite to good reading. Poetic composition, at present so remote from the child's ordinary mode of expression, fills the young, inexperienced interpreter with self-consciousness as he reads. Naturalness is thus lost. The ends of the lines,

all marks of punctuation, and the rime and accent give him no end of trouble. I have in mind a boy, who is not a fluent sight reader. Not long ago he was asked to recite in his elocution class, and, not having learned a poem, he gave his own, *The Death of the Red King,* which he had that week composed for the History class. He was so filled with the meaning of what he had written that all of the mechanical difficulties dropped away and he won the applause of both teacher and fellow students. Since that day he seems to have caught the spirit of rhythmic expression, and his difficulty in the reading of poetry seems to have been solved.

In imitating poetic masterpieces, the child, moreover, vitally realizes the value of sound effects produced by the careful choice and placing of words. Figures of speech, too, take upon themselves an added meaning. The youthful verse-maker sees the increased force which they give to his thoughts. He appreciates in verse-making especially the appropriateness of the use of metaphors, similes, and the various other figures in securing vivid effects. Exactness in the meaning of words, accent, the number of syllables, and the quantity of vowels, all assume a new aspect to him if his teacher uses a direct and simple method in analyzing the poems to be imitated. The mechanics of verse-making thus appeal to him in a practical way and he no longer looks upon them if, for instance, he swings into the spirit of creating a school song, as so much dead material to be mastered before he can accomplish his purpose.

Thus far I have tried to show: (1) that the qualities of the poetical temperament are to be found in a free but undeveloped state in the child; and (2) that they should be developed through constant expression in verse composition, in order, (a) to eradicate the impression that poetic expression is a thing foreign to his nature, (b) to stimulate him to express himself freely in various kinds of simple verse upon subjects dealing with outside activities and with school subjects, (c) to increase his enthusiasm for the study of poetic masterpieces, (d) to aid him in the reading of poetic masterpieces and, (e) to teach him the simple elements of prosody through their immediate application.

Before passing to the second division of my subject—the method of teaching verse construction—I wish to submit two "poems," one by a child of nine, and the other by a boy of fourteen. Both caught their inspiration from nature and both illustrate a real spirit of comradeship for the things they write about.

Hiss, hiss! I wish I were a turtle,
A slow and lazy turtle, living in a wood,
Eating bugs and worms and flies,
Winking with my small red eyes,
And my shell I would not sell
The price be what it could.

Gug, mug! I wish I were a bull frog,
A green and slimy bull frog, croaking in a marsh,
With my flat and golden ear,
Every little sound I'd hear,
Dive with glee where none could see,
And croak in a voice quite harsh.

Hop, jump! I wish I were a rabbit,
A gay and frisky rabbit, running where I please,
Laughing at the trap and gun,
Hopping, jumping in the sun,
In the wood or where I could
I'd live quite at my ease.

* * *

There are those who love the ocean's waves,
The white-capped billows' surging roar,
Their hearts' content to yacht all day
Or bathe or bask along the shore.

Some make their choice the mountain dell
Ensconced by forest's stately green,
They paddle on the crystal lake
And hunt wild game in joy serene.

But I love most the country-side
'Mid gurgling brooks and flowers fair,
To wander 'neath the shady oaks
And breathe the sweet refreshing air.

And when with gold the leaves are tinged
I gather chestnuts on the hill,
Or shake the pippins from the trees,
And drink sweet cider at the mill.

I love to hunt the cunning quail,
With two good setters at my heels,
In thicket dense or by the marsh,
My rifle often sharply peals.

I canter through the shady lanes,
All vegetation fresh with dew,
And revel in fair nature's charms,
In early morn revealed to view.

The sea shore may be very fine—
The mountains good for healthful rest,
But I combine them all in one—
The country-side I love the best.

There are doubtless many good methods of teaching verse structure and many ways of stimulating a desire in the child

to write in rhythmic language. None of us would thoroughly agree as to a "best method." So much depends upon our course of study, upon our pupils, upon our own enthusiasm for various kinds of poetry. The following teaching plan, worked out, with my help, by Mrs. Ida Gilbert Myers, former assistant superintendent of public schools, Washington, D. C., may prove suggestive. The scheme was made for use with boys of about fourteen. I submit the plan somewhat abridged, omitting many of the details dealing with the close relation between song-making and verse-making.

Introductory Lessons

I. Sing, with the mind given entirely to the swing and movement of these songs:—My Country 'Tis of Thee, The Marseillaise, Annie Laurie, Abide With Me, etc. Question from the musical score for the tempo in which each is written. Select the measures that literally follow this time plan, i. e., if the time signature is 3-4, select those measures that conform strictly to this plan by each being made up of three-quarter notes. Select the measures that have the same value but vary from this plan. Show the effect of this variation upon the expression of the song idea.

II. Write several of the stanzas of each of these songs, without the music, upon the board. Strike, or mark, each of the words or parts of words, accented in the singing, as—

Mine eyes have seen the glóry of the coming of the Lórd.

Question to reveal the importance of these accented words in expressing the thought. Have the number of accents in the first line counted and then compare the number of accents in each of the other lines with this line. Show that these regularly recurring accents give to the song its cadence and movement. To develop this idea further, copy upon the board the first stanza of—Wordsworth's "O Nightingale, Thou Surely Art," Holmes' "Spring Has Come," Tennyson's "The Owl." Show what words by their importance take a natural emphasis, upon what syllable the accent falls, and what syllables are touched lightly. Discuss then the number of lighter syllables accompanying generally an accented one. Show that in these poems the first line furnishes the pattern for the other lines in the stanza.

III. Read a few stanzas now of any simple nature or narrative poems to bring out the accent. Explain the terms *scanning, rhythm.* Scan a piece of lyrical verse, say for instance, Shakespeare's "Hark, Hark the Lark," and then read the poem naturally, making the proper pauses, crescendos, inflections, etc. Show that the effects produced in this second reading are secured, as in singing, by a variety in the dis-

tribution of time values, rests, tones of voice, etc. Bring out, however, that in both readings rhythm is the essential quality. Show by a *brief* history of English verse that it is rhythm and not rime that distinguishes poetry from prose. Scan various simple poems to explain more in detail the time plan of the line, the general plan of the stanza. Show the rhythm in the Psalms. Have the pupils copy Psalms I, XXIII, and C in the form of poetry.

Verse-Making

I. The changing of prose selections into poetry. Method —Select the thought for the first line. Establish the movement, or time scheme, of this line in the following manner: *a,* Arrange the important words so that these give the place and number of accents in this line; *b,* Divide the line into measures by placing a bar before each of these accented words; *c,* Complete each measure by adding unstressed syllables or words. The thought being given, the purpose of this exercise is to select and arrange the words expressing this thought in such a manner that each line expresses a rhythmical movement. When the plan of the first line has been determined upon, use it as a pattern upon which to build the rest of the stanza. Material—Change into simple prose a stanza of unfamiliar poetry dealing with a theme near to a child's life. After the exercise has been performed compare the pupil's work with that of the original poetic selection.

II. Show now that a stanza of a poem is like a paragraph in the writing of a prose composition. Write the material for a short poem of about four stanzas upon the board. Determine upon the beginning and the end of each stanza. Write the stanzas following the suggestions in I.

III. Rime—Write upon the board the first stanza of "Snow Bound." Review the rhythm. Question for similar or parallel words. Show where they are placed. Explain how they are similar, how dissimilar. Examine a few lines of blank verse to show again that rime is not an essential characteristic of poetry. Study many poems to show various riming schemes.

IV. Rime continued—Examine many groups of riming words. Show what parts of these words agree exactly in sound; which parts agree exactly in letter; in what respect alone these similar words differ. Explain that a perfect rime requires exact coincidence of terminal consonant sounds as m-*ind,* k-*ind.* Give many such base words upon which perfect rimes can be made. Have pupils construct such rimes. Explain the difference between these strong, masculine rimes and weak, feminine rimes.

V. As in I, Verse-Making, write prose material upon the board to be changed into one stanza riming poetry. After pupils are able to write a single riming stanza, work with a series of stanzas developing a single theme. Follow a simple riming plan at first and then later work with various riming schemes.

VI. Atmosphere—Show how the subjects of several selected poems are suitable to poetic expression. Develop the effect of the use of figures of speech. Notice the arrangement of words, phrases and clauses in securing rhythm, smoothness, and beauty of expression. Study the choice of words in creating color effects. Notice the effects of repetition and the use of the refrain.

VII. Examine any half dozen ballads. Explain the main characteristics of such poems. (A simple discussion of this subject is to be found in the Introduction of Ballads and Ballad poetry by Professor E. E. Hale, Jr., Globe School Book Co., New York). Write several incidents from "Ivanhoe" in ballad form. Have suitable Biblical stories treated in the same manner.

VIII. Additional exercises—Examine Christmas and Easter verses. Compose suitable verses for such occasions. Study advertising verse. Show how it differs from other verse in purpose, in expression. Examine school and college songs. Show the spirit, the purpose, and underlying plan of these. Have short school songs composed. Correlate the work done in the literature classes with verse-making. Example—If the class is studying the "Idylls of the King," have several of the stories told by Malory, but not by Tennyson, developed into blank verse following the model of the "Idylls."

THE EDUCATION OF A PARTIALLY PARALYZED MUSCLE *

By Earl Barnes

The conclusions of this paper are based mainly upon eight years' experience with a little girl who, when eighteen months old, was stricken with infantile paralysis. During these years I have seen the best specialists in America and England in general neurology, massage, electric treatment, mechanical appliances and corrective exercises. I have also seen many other cases of infantile paralysis and have watched the development of many of them under different forms of treatment or neglect.

The paralysis to be considered in this paper is due to the destruction or impairment of some of the nerve cells in the anterior horns of the spinal cord. These cells under normal conditions send out the motor impulses that cause the muscles in different parts of the body to contract, producing action. Infantile paralysis directly affects neither the muscles nor the nerves. It simply demoralizes or destroys the battery lying behind these. Unlike rheumatism, it leaves the motor apparatus unimpaired except in the nerve centers where the motor impulse originates. Since its victims are generally children whose growth is still to be accomplished, the treatment following the acute period of disease, which rarely continues more than a week or two, is mainly educational and belongs rather to educational experts than to physicians.

In the case in which I have been specially interested the child, a girl of eighteen months, strong and healthy and walking freely, was at first so badly paralyzed that she was entirely helpless. She had to learn slowly to creep again, and only after months was she able to stand supported by braces on both legs. From the first, however, there was a steady improvement and now, after eight years, she is taller and heavier than the average of ten-year-old girls; the trouble is confined almost entirely to the left leg below the knee; and she walks miles without any braces of any kind, swims and rides a bicycle or a horse. The muscles contracting the left foot and toes downward are active, but the muscles that lift the foot and toes have not recovered their action.

* A paper read before the Congress of Hygiene and Demography, Washington, D. C., 1912.

In this recovery mechanical appliances, braces and supports have been freely used under the best orthopedic direction to be found in America or England. Such supports, whether of rubber, leather or metal, have two functions. By supporting the weaker muscles they enable the child to stand and move about, thus adding greatly to the health and happiness of the child. They also insure the weaker muscles and tendons from being overstrained and thus prevent deformities which it would be very difficult to correct where control and nutrition are already weakened.

On the other hand, mechanical appliances always interfere in some degree with circulation, which was already impaired and thus increase the probability of atrophy. They also make it possible through the new leverages they establish for the child to act without calling all the muscles into use. If a foot can be put where one wants it without using the muscles of the foot, even the partial work they might do is left undone and with disuse power is not recovered and even what exists may be lost. In the education of impaired muscular control mechanical appliances are often indispensable, but they are at best a necessary evil.

In the treatment of these cases frequent and sustained massage is always necessary. In the case under consideration impaired muscles were massaged every two hours of waking time during the first year and daily since with brief exceptions during holidays or travel. The massage, by exercising the tissues, increases the blood supply and works out broken down tissue. By strengthening the blood supply and aiding nutrition it prevents atrophy.

However, it must be remembered that the initial difficulty does not lie in the muscles but in the nerve cells in the anterior horns of the spinal cord. There is doubtless some reaction upon these nerve cells through massage, as will be explained later, but the principal values of massage are to keep up the general health and keep the bony levers and their muscular attachments in good order so that if function of the nerve cells is restored the machinery of action may be ready for use. Massage can also keep unused muscles stretched and thus prevent deformity.

The effect of electricity on muscular action is still too uncertain for a layman to pass any judgment upon it. I have tried both galvanic and ferradic currents but with uncertain results.

So far we have discussed the means for keeping the muscles in good condition, but how are we to reach the nerve cells in the anterior horns of the spinal cord. Some restoration of function will come steadily with renewed health and the natural

processes of growth, but specially devised exercises will certainly accelerate and increase this restoration. This is the point where definite education comes in.

All of Dr. Edward Seguin's work with the feeble-minded rested on the belief that even passive exercises tended to strengthen the nerve centers. Thus to make an imbecile think, he exercised his arms and legs and the other parts of the body along lines of coördinated action, established in the human system by many generations of ancestors for useful purposes. The teaching of Dr. Montessori implies the same belief in the value of organized activity in strengthening nerve centers, though she does not state it so clearly as does Dr. Seguin.

Our present knowledge of the nervous system enables us to understand how action may strengthen the nervous system. An efferent current is sent out from a motor center only when that center is aroused by an impulse coming from the sensory centers or from an ideational center in the cerebrum. Now opposite the anterior horns of the spinal cord are posterior horns of sensory nerves into which sensations are poured from all parts of the body. These sensory cells of the posterior horns have their connections. They are connected directly with the motor centers in the anterior horns of the cord, with the cerebellum, and with the cerebrum.

Let us imagine then what would happen if we tickle a child's foot. The sensation will be carried in along an afferent nerve to the nerve cells in the posterior horns of the cord. This impulse will then undergo some change, not well understood, and will pass on as impulse to the impaired motor cells of the anterior horns, to the cerebellum and to the cerebrum. If the child be passive, or even asleep, the impulse will pass out of the anterior cells to the muscles of the foot and it will be withdrawn from the tickling finger. If the child is awake and attentive the outgoing impulse will be strengthened from the cerebrum center and the foot will be still more vigorously withdrawn. If stimulation and exercise mean growth and health, as we believe they do, then all these centers must be improved if they are normal or merely impaired. Thus, all massage, by exciting a multitude of sensations that flow into the posterior horns and pass on to the motor centers in the anterior horn, to the cerebellum and the cerebrum, must strengthen all these centers even if the massage is received in a purely passive state.

But in exercises the child's attention and will can be brought into play and so the returning body of sensations excited by the action must be vastly more effective than when the child is passive. Further, if these exercises are so planned as to

correspond with the habits of the race, which by long repetition have become almost or quite instinctive, our training will be doubly effective because it will move along lines of least resistance. Walking, talking, handling, are types of such action.

Thus if the muscles of the legs are affected we can put the child on a tricycle and tie his feet to the pedals. If he is then pushed about the thousands of sensations excited in connection with a movement of the legs habitual to the race will pour back through the posterior horns of the spinal cord and pass on to the impaired motor cells of the anterior horns, tending to strengthen all of them; they will also pass on to the cerebellum and the cerebrum from which they may come back as voluntary effort still further strengthening the impaired cells. Walking, swimming, horseback riding will broaden and strengthen the general training of the impaired centers.

But the nerve cells of the motor centers, if not entirely destroyed, undergo different degrees of impairment. Some are capable of very slight response while others may remain very nearly normal. Here the specialist, intimately acquainted with anatomy, must come in to devise special exercises. If the right foot turns outward exercises must be devised that will make the foot turn in. Understanding the game, but not necessarily its purpose, the child will concentrate his attention and his will upon it. Such effort as he can make he will put forth and the sensations awakened by the effort and its movement will travel back and ultimately produce an effect upon the impaired centers which should control that action.

It is obvious here that the coöperation of the patient is of the greatest possible value. Hence the educator must call to his aid every possible device that will interest the child. Approval, praise, rewards, emulation, a sense of steady advance, will make the child his own best aid in working through the otherwise dreary repetitions that lie on the road to recovery.

Meantime, with skillful direction and unfailing courage, the restoration of function may go on for years. I have seen constant unremitting effort fail to produce any visible result for a year, and yet eventually lead to almost complete restoration.

"A FOLLOW-UP SYSTEM IN MEDICAL INSPECTION"*

By Thomas A. Storey, College of the City of New York

Active, aggressive health is the most important human resource. This is true because of the determining influence of health upon the success of every human enterprise. It is of supreme importance in its relation to the quality of all physical efficiency and to the value of all mental productivity.

On account of this fact any phase of educational method which develops health intelligence and health habit in human beings is of very great educational and practical importance. This importance is now very generally recognized in our public schools and colleges. Unfortunately we are far from a unanimous decision as to what is the best method of instruction along these lines. Too much of our instruction is of the sort that stimulates no response in terms of practical application. Too little of the hygiene learned in our schools is ever used by the boys and girls in their homes. Too little of such hygiene ever becomes habit.

In the Department under my supervision we have attempted to secure a method of instruction in hygiene which will develop permanent health habits in the individuals that come under its educational influence. One phase of our work includes medical inspection. We do not like to call this part of our work "medical inspection." We prefer to make it and call it individual instruction in personal hygiene. In this scheme medical inspection becomes a part of our method of securing information concerning the hygienic needs of the individual, and a basis on which the individual may be given advice bearing upon his personal health problems.

Our methods of medical and hygienic examination have been described elsewhere and need not be described here. The important feature in our plan lies in our method of following up our instructions to the individual. All advice and instruction given during medical and hygienic examination is followed up within as short a time as is reasonable. If the individual is found affected by some communicable disease which is a menace to the health and hygiene of his associates,

* Presented before Section III, 15th International Congress on Hygiene and Demography.

he is required to remove the complaint or leave school. If the individual is found suffering from the influence of remediable incapacitating physical defects, the fact is brought to the attention of his parent or guardian. This notice must be recognized. The pupil must return with evidence that the incapacitating defect is being treated, or he must bring a note from his parent or guardian stating what he plans to do. Failure to bring such a communication is handled as a matter of discipline. The boy is debarred from all classes until he brings in this note or until he brings in evidence that he is under treatment.[1] If the parent writes that he does not propose to do anything with reference to a condition or a defect that has been reported to him, the fact is noted and the boy is relieved of any further obligation at that time. This is not done, however, until every reasonable effort has been made to place the hygienic importance of remediable treatment before the boy and his parents. The regular examination is repeated each half year, so that such a defect comes under observation twice a year for five years, and the need for treatment is urged at least as many times during that period.

As a matter of fact, the percentage of parents that refuse to secure treatment is very small. For the year ending June 1, 1911, the number in this class was seven-tenths of one per cent., and for the year ending June, 1912, it was eight-tenths of one per cent.

The routine involved in following up this instructional advice may be outlined as follows: At the time of his examination each boy is seen by a member of the staff with all the results of his preceding examination or examinations recorded on cards made out for that purpose. The instructor then goes over the boy's record with him and advises him as to what has to be done and what ought to be done for the improvement of his health habits and his physical condition. As he proceeds with this advice, the instructor makes out a "Conference Card." This card contains the boy's name, his address, his class and section in the school, frequently his schedule of recitations, and a record of each "diagnosis" for which advice has been given.

The boy himself is given a card which contains a record of the things to which his attention has been called and a memorandum of the date or dates on which he has been directed to return for conference. Finally, he is given a card containing a communication to his father with a request for a record of

[1] The Department itself will undertake no treatment other than strictly emergency treatment. No physician on the departmental staff has ever secured a private student patient through these examinations.

his physician's or dentist's examination and treatment on the back of the same card.

These various cards are so printed as to require a minimum of clerical work in filling them out.

After the boy has received this instruction, the conference card is filed away. When the boy returns for conference his conference card is drawn and on it is recorded the fact that treatment has been promised, secured or refused. If the case cannot be closed in this way at this conference, a record is made of the fact that the boy reported and he is given a new date for subsequent conference.

The file of conference cards is gone over regularly every day or two. All delinquent boys are warned that they should report as directed. This "warning" is accomplished in one of two ways; either the boy is seen personally in the class room, or a letter is sent him, addressed to his home. In the latter case the letter reads that the boy will be debarred from all classes unless he reports to the central office of the school on or before a certain date with a communication from this Department stating that he has satisfactorily followed directions. If the boy then fails to report he is debarred from all classes, and can be reinstated only on recommendation from the Department of Hygiene.

In those instances in which treatment is promised, the cases are followed up at longer intervals in order to secure a record of what is done. The boy is reminded of his promise at fairly frequent intervals by means of this plan.

The success of this "follow up" system during the year ending June 1, 1912, may be seen in the following statistics:

	1st term	2d term
Number of boys given instructional advice	1051	936
Number of diagnoses followed up	1542	1409
Number of conferences necessary to follow up all cases	2244	1925
Number of "diagnoses" recorded as "under treatment"	73	158
Number of "diagnoses" recorded as having "secured treatment"	1298	1093
Number of "diagnoses" recorded as having "refused treatment"	11	10
Number of "diagnoses" recorded as having "promised treatment"	108	102
Left college	48	40
Number of parents refusing to secure treatment	9	8
Number of individuals warned	328	290
Number of individuals debarred	71	92
Number of individuals reinstated	67	85
Number of individuals that remained debarred	4	7
Number of dentists consulted privately	273	256
Number of physicians consulted privately	189	139
Number of opticians consulted privately	22	16
Number of dental clinics attended	3	4

	1st term	2d term
Number of hospitals attended	24	14
Number of students securing private dental service	320	310
Number of students securing private medical service	204	147
Number of students securing the service of opticians	15	18
Number of students securing free dental service	8	13
Number of students securing free medical service	4	5
Number of students securing free clinical service (dental)	0	3
Number of students securing free clinical service (medical)	10	11
Number of students securing service of optician free	0	0
Total number securing private service	539	475
Total number securing free service	22	32
Total number for whom home treatment was sufficient	490	429

These statistics justify the following conclusions:

First. Our medical inspection is effective. It is securing the repair of physical defects and it is correcting unhygienic conditions in over ninety per cent. of the cases in which such treatment is desirable. This plan of individual instruction in personal hygiene is improving the physiological efficiency of at least a thousand boys every half year.

Second. Our plan of individual instruction in personal hygiene has met with the support of the parents of practically all our boys. Less than one per cent. of the parents refuse treatment. No system can endure without such support.

Third. It is safe to expect that this continued personal relationship extending throughout the high school period and covering the first two collegiate years will develop permanent habits of personal health control in many if not in most of the boys under our supervision.

THE EDUCATIONAL MUSEUM AT CLARK UNIVERSITY: CATALOGUE OF THE DEPARTMENT OF SCHOOL HYGIENE

By Wm. H. Burnham and M. Evelyn Fitzsimmons

Introduction

The general purpose of the Museum, namely, to show the evolutionary and dynamic aspects of education, is well illustrated in the department of hygiene. The aim of this department is fourfold.

First, the aim is to collect illustrative material of various kinds in the field of general hygiene, with special emphasis on development, nutrition, and preventable diseases.

Second, the aim is to show the evolution of the modern schoolhouse and the structure and contents of a model schoolroom from the hygienic point of view. For this purpose charts, ground plans, working drawings, models, photographs, apparatus, and the like are collected. All of these are significant, whether they represent what is new or what is obsolete to-day. In the case of school furniture, for example, the aim is to show the evolution of the school seat and the school desk. Hence it is desired to collect the oldest seats and desks available and those representing all stages of development, from primitive seats down to the best adjustable seats of to-day. This series is not yet complete, but a good beginning has been made in the seats and desks already purchased and in the charts which show the evolution of the school seat and desk.

Third, the aim is to collect material illustrating the development and hygiene of the child, especially at school age. The attempt is made, by a series of models and charts, to show the development of the human being from the earliest embryonic stages throughout the whole period of development to complete maturity, and, when it is possible, to supplement this with illustrations of the stages of senescence, thus sketching the whole life history of the human individual.

The attempt is also made here to collect models and charts illustrating common abnormalities that can be remedied by proper treatment during the period of growth. A good illustration of this is the set of models showing normal and malocclusion of the teeth. The classification is that of Dr. Angle of St. Louis. The models were prepared by the kindness of Dr. L. W. Baker of Harvard and are all made from actual

cases. This is a typical case in point, because by suitable treatment, especially if given in the early years, normal development and normal occlusion can be obtained. The great importance of such treatment is shown by the fact that the investigations of Dr. P. H. Wright and others indicate that with the dental abnormalities several nasal defects are likely to be correlated, and that normal development of the teeth and the arch of the mouth is necessary for the normal development of the bony structure of the mouth and nose in general and of great importance for the general health of the individual. In many other cases of abnormal development similar results could be obtained probably by proper care and treatment during the early years. Models and charts illustrating any form of development and remediable abnormalities are desirable.

Here and in the section on school sanitation the aim also is to show the evolution and present status of our knowledge in child hygiene and the methods and results of work in this field, especially the results of investigations in regard to the various school diseases, the incidence of these diseases, the effect of antitoxins, of cleanliness, etc.

Fourth, the aim is to obtain material to illustrate the history and evolution of mental hygiene and the hygiene of instruction. While under this head only a small amount of material has as yet been obtained, it is hoped ultimately to make this an important exhibit.

Only a beginning has yet been made in the hygienic department of the Museum. The aim, however, is a definite one, namely, to show the evolution of hygiene and especially of child hygiene, and to collect the latest and best hygienic devices and apparatus. While at present in each section the material is inadequate and under many topics nothing has yet been collected, new accessions are being constantly made and it is hoped in the near future to fill many of the existing gaps.

In spite of the incompleteness of the collection, it has seemed wise to publish this catalogue of the present contents of the department of hygiene, together with a statement of its aims, for the convenience of those who use the material and also to illustrate the general plans and purpose of the Educational Museum.

The classification is elastic, and no effort has been made to prevent a certain amount of overlapping. The divisions are not rigorously logical but made for convenience, and the aim has been to place the emphasis on child hygiene and school hygiene rather than to give what might seem a natural and logical classification of the whole field of hygiene.

The Museum takes this opportunity to express its cordial thanks to the many persons who have contributed to its con-

tents or made suggestions for its development. Many physicians, hygienists, and educators have expressed their interest in this collection and have contributed important information. It is hoped to realize a large part of these suggestions; and on behalf of the University the writers wish to express their great indebtedness to those who have responded so generously and have expressed their interest in the aims and scope of the Museum.

The letters NH on the charts in the Museum refer to the section, Hygiene. The numbers in parentheses are the accession numbers, inserted merely for the convenience of the Museum. The other numbers refer to the following scheme of classification, which is similar to that used in section N, the department of Education, in the University Library.

1 General
- 11 Prevention of disease
- 12 Nutrition
- 13 Special physiological functions

2 Architecture and School Sanitation
- 21 Playgrounds, outdoor schools, etc.
- 22 Building plans etc.
- 23 Heating, lighting, ventilation, and water supply
- 24 Furniture and apparatus
  - 241 Blackboards, etc.
  - 242 Desks and seats
  - 243 Drinking cups
  - 249 Miscellaneous
- 25 Cleanliness
- 26 Hygienic apparatus
- 29 Miscellaneous

3 Hygiene of the Child
- 31 Growth and physiological age
- 32 Posture
- 33 Eye
- 34 Ear
- 35 Voice, nose, throat, and teeth
- 36 Diseases, first aid, etc.
  - 361 Scarlatina
  - 362 Diphtheria
  - 363 Measles
  - 364 Typhoid fever
  - 369 Miscellaneous
- 37 Effects of alcohol
- 39 Miscellaneous

4 Mental Hygiene and the Hygiene of Instruction
- 41 Psychological age
- 42 Mental hygiene
- 43 Fatigue
- 44 Period of study, etc.
- 45 Grading
- 46 Physical exercise
- 47 Reading, spelling, etc.
- 49 Miscellaneous

1 GENERAL HYGIENE

11 Prevention of Disease

Kean, J. R.—Chart showing mortality and morbidity from typhoid fever, 2nd division, 7th army corps. Jacksonville, Fla., 1898. (From *Jour. of Am. Med. Assoc.*, Aug. 26, 1911, p. 714.) 34 x 42 in. (1007)

Among 10,759 soldiers there were 2,693 cases of typhoid fever, resulting in 248 deaths, while the total death roll from all causes was only 281.

Kean, J. R.—Chart showing mortality and morbidity from typhoid fever for maneuver division, San Antonio, Texas, Mar. 10-Jy. 10, 1911. (From *Jour. of Am. Med. Assoc.*, Aug. 26, 1911, p. 714.) 42 x 42 in. (1006)

This chart shows that among 12,801 soldiers at San Antonio in four months there was only one case of typhoid fever, no deaths from this disease, and only 11 deaths in all, while at the same time there were cases of typhoid fever and some deaths in that city. The difference between this and the 1898 mortality (see preceding chart) is attributed to modern sanitary precautions and preventive inoculation with typhoid antitoxin.

Single service milk bottles. (Gift of Single Service Pack. Co.)

In quart and pint sizes, made of paper coated with paraffine. (1495)

Tuberculosis exhibit. 34 pictures and 14 mottoes, each 7½ x 9½ in., concerning prevention of tuberculosis, mounted in a wooden frame. Brayton. (1413)

Tuberculosis pictures. 7½ x 9½ in. Brayton. (1419)

63 photographs, showing wholesome and dangerous industries, working conditions, district nursing, outdoor life, etc.

Nietner, J. & Lorentz, Fr.—Tuberculosis chart. (Wandtafel zur Tuberkulosebelehrung.) 37½ x 50½ in. Müller. (1149)

This chart presents seven exhibits on the study of tuberculosis by the German Central Committee, with explanations by J. Nietner and Fr. Lorentz.

I. Exposed chest, showing heart, lungs and viscera *in situ*. II. Cluster of air vesicles taken from lungs, highly magnified. III. Relation of blood capillaries to air vesicles. IV. Three stages of the development of the disease in a single air vesicle. V. Four stages of development of the disease in a single lobe of the lung. VI. Tubercle bacilli as they would appear under microscope magnifying 2,000 diameters. VII. Curves showing death rate for 10,000 in Prussia since 1875; while general death rate decreases from more than 260 to less than 160 per 10,000, deaths from tuberculosis decrease from 32 to 15 per 10,000 in the same period.

Pauchet, Victor.—La vie hygiénique; règlement de chaque jour. 21½ x 29½ in. Paulin. (1153)

Outline chart of hygienic regulations for each day, as to morning exercises, toilet, breakfast, manner of eating, precautions as to ventilation and temperature during the day, and the hygienic conditions of the sleeping room. The chart

also gives general directions concerning foods, menus, drinks, clothing, houses, etc., as well as concerning the more social factors of sports, recreations, punishments, etc. (Loaned by the Library.)

See also 369 Miscellaneous diseases. Trumpp, J.—Children's diseases.

Lantern slides.

5 Lantern slides on the fly.
23 " " " hygiene (miscellaneous).
5 " " " milk.
12 " " " mosquitoes.
3 " " " typhoid fever.
12 " " " tuberculosis.

Motion picture films. Kleine. (1414)

The Fly Pest.

This is an instructive film for the motion picture machine showing blow flies laying eggs in putrid meat; eggs attacked by the Ichneumon fly; the hatch; maggots in various stages; pupae; the fly, wingless, emerging from the earth; full grown; tongue and foot of the fly, greatly enlarged; various examples of flies carrying contagion, etc.

12 NUTRITION

Composition of food materials.—15 charts prepared by C. F. Langworthy, U. S. Department of Agriculture. 20½ x 26½ in.

1. Milk and milk products (1164)
2. Eggs and cheese (1165)
3. Meat, fresh and cured (1166)
4. Fish, fish products and oysters (1167)
5. Butter and other fat-yielding foods (1168)
6. Cereal grains (1169)
7. Bread and other cereal foods (1170)
8. Sugar and similar foods (1171)
9. Roots and succulent vegetables (1172)
10. Legumes and corn (1173)
11. Fresh and dried fruit (1174)
12. Fruit and fruit products (1175)
13. Nuts and nut products (1176)
14. Compositions, uses and function of food (1177)
15. Dietary standards (1178)

20 lantern slides on nutrition. Foltz & Fuller.

Nutritive value of some of the most important foods.

Jars containing relative amounts of the various constituents of foods. Bad. Lehr. A.

Bacon (1909)
Beer, Brown (1907)
Bread, Rye (1902)
Bread, White (1906)
Butter (1894)
Cheese, Pot (1901)
Cheese, Rich (1900)
Cheese, Skim-milk (1893)
Cocoa ("Stollwerck") (1912)
Cream (1899)

Eggs (1910)
Fish, Dried (1903)
Fruit, Dried (1896)
Fruit, Fresh (1905)
Kohlrabi (1892)
Meat, Medium fat (1898)
Meat (Medium fat, smoked and salted) (1904)
Milk, Cow's (1914)
Mushrooms (1897)
Peas (1911)
Potato (1895)
Wheaten flour (1913)
Wine, Table (1908)

These glass jars contain the exact number of grammes of the actual food constituents, water, proteid, etc., in a sample of 100 grammes of several of the principal foods, e. g., the five jars for Rich Cheese contain:

Cheese	Water	Protein	Fat	Salt
100 grammes	33	35	30	2

Those for Meat (Medium fat, smoked and salted)

Meat	Water	Protein	Fat	Salt
100 grammes	47	31	11	11

The pedagogical value of a device like the above lies in its concreteness, in the strong sensory appeal it makes, in the live interest it awakens by presenting the exact constituents of foods used every day.

Milk.—5 quart milk bottles, each containing one of the ingredients of milk in amount equal to its proportion of the whole quart. Ed. Ex. Co. (1891)

13 Special Physiological Functions

Strips of figures for use in a zoetrope, showing the movements of the stomach in digestion. Harv. App. Co. (1163)

Zoetrope for above. Int. Inst. Co. (1198)

2 ARCHITECTURE AND SCHOOL SANITATION

21 Playgrounds, Outdoor Schools, etc.

Outdoor schools.—13 photographs of Chicago outdoor schools. 6 x 8 and 11 x 14 in. McCormick. (1801-1802)

Eskimo suit, gloves and boots, such as are worn in outdoor schools. McCormick. (1797-1799)

22 Building Plans, etc.

Model school buildings at Kirksville, Mo. (1104)

This shows three floors, heating and ventilating systems, seating and lighting facilities, with method of construction, drainage, sanitation, etc. (See Bull. of the First District Normal School, Kirksville, Mo., June, 1911.)

School houses.

14 photographs of school buildings (Chicago) of modern design; bound in booklet form. (1110)

5 model Texan school buildings. (Procured through the courtesy of Prof. A. C. Ellis, University of Texas.) (1793-1796, 1800)

Pamphlets on model buildings. Gift of Dr. R. W. Corwin. (1421)

"Little red schoolhouse," Dist. 5, Abbot Hill, Wilton, N. H. Colored photograph. Plumer. (1917)

8 blue prints of the Winsor School, Longwood, Mass. 27 x 36 in. R. Clipston Sturgis, Architect. (1696-1703)

9 blue prints of the Sarah J. Baker primary school, Lewis District, Boston, Mass. 24 x 40 in. J. A. Schweinfurth and John J. Craig, Architects. Gift of Boston Schoolhouse Commission through the courtesy of Mr. Charles Logue. (1833-1841)

27 blue prints of the Abraham Lincoln School, Winthrop-Brimmer District, Boston, Mass. 24¾ x 34½ in. A. W. Longfellow, Architect. Makepeace. (1995-2021)

12 blue prints of the primary school, Eliot and Hancock Districts, Boston, Mass. 23½ x 35½ in. Winslow & Bigelow, Architects. Makepeace. (1842-1853)

21 blue prints of the Cheverus School, Blackinton District, East Boston, Mass. 22 x 36 in. Brainerd & Leeds, Architects. Cobe. (1955-1975)

23 Heating, Lighting, Ventilation, and Water Supply.

Burgerstein, Leo.—Wandtafeln zur Schulhygiene. 39½ in. x 55 in. K. k. Schulb. Verl. (1016d-1016f)

1. Water Supply. (1016d)
This chart deals with the arrangement of wells, arrangements for drinking, details of construction and individual cups. Fig. 1, Soil drainage and the virtues of shallow and deep wells; Fig. 2, Child using sanitary drinking fountain; Figs. 3-5, Mechanism of sanitary drinking fountains; Figs. 6 and 7, Racks for holding individual drinking cups.

2. Ventilation. (1016e)
Fig. 1, Proper positions for inlet and exhaust with means for preventing back currents in a commercial ventilator. Fig. 2, Disadvantages of ventilation through doors and windows; Fig. 3, Device for cleaning and filtering the air and for securing proper humidity as air enters room; Fig. 4, Ventilation by streams of air directed from natural wind currents by scoops through pipes.

3. Heating. (1016f)
Plans for warm water, low pressure steam, and gas heating systems, with special reference to the methods for insuring proper circulation in pipes; also devices for keeping the current of heated air as near the radiating surface as possible.

6 lantern slides on ventilation. Foltz & Fuller.

24 Furniture and Apparatus

241 *Blackboards,* etc.

Schulwandtafel aus Holz im Gestell zum drehen; zwei Schreib-flächen. 100 x 150 cm. Stechert. (485)

Reversible wooden blackboard on portable wooden frame, horizontal central pivot, adjustable to three heights. Detachable chalk and eraser box.

Schwamm- und Kreide-Behälter. Stechert. (484)

An individual wall case for sponge and chalk.

Dustless removable blackboard trough. (1103)

Model of shallow screen-top trough for collecting dust from blackboards and erasers.

242 *Desks and seats.*

Chandler desk. Chandler. (1055)

Non-adjustable desk with lift top and enclosed book receptacle.

Chandler desk and chair. Chandler. (1052)

School desk adjustable as to height, and with top adjustable to plus and minus distances; lift top, enclosed book receptacle, outside and inside pencil rack, vulcanized rubber ink well, etc. Separate stool with back, both stool and back having separate vertical adjustment.

Chandler desks and chairs, No. 3 and No. 4. Chandler. (1053-1054)

Chair and desk each adjustable to height, mounted on portable platform, lift top, enclosed book receptacle, pencil racks, ink well, etc.

Moulthrop movable school chair. Langslow. (1867)

This has a simple writing shelf instead of a desk, which is adjustable both as to height and distance, and a box for books under the seat.

American steel adjustable desk and chair, with sliding top. Am. Seat Co. (1810)

The aim has been to combine the essentials of a hygienic seat, and there is no filigree work or the like to catch the dust.

Esmarch, E. von.—Anschauungstafeln für Vorträge über die Schulbank. 39¼ x 50½ in. Müller. (1021-1036)

Sixteen wall charts representing the numerous problems of adapting school seats to hygienic positions of the body. This set of charts shows the evolution of the school seat and desk.

1. Origin of school seat; chief proportions. (1021)
Relation of seat and desk, illustrating plus and minus distances.

2. Development of seat and back rest. (1022)
Relation of seat and back, with numerous types of back rests.

3. Plus and minus distance. (1023)
Positions of pupils with seats at plus and minus distances, two sitting and two standing postures.

4. Harmful posture with too great difference. (1024)
Improper positions in seat with too great difference; two side and two back views.

5. Movable desk covers. (1025)
Movements of desk top for convenience of school work; (a) back fold; (b) horizontal swing; (c) horizontal slide; (d) lift desk and back swinging seat.

6. Movable seats. (1026)
Movable seats with various positions of the articulating support; (a) low, medium, and high points of support; (b) swinging, sliding, folding, rotating seats, with characteristic movements.

7. Multiple seats with sections. (1027)
Two patterns of multiple benches with openings.

8. Standing at side, with double seated bench. (1028)
Proper positions in seat for convenience of stepping out and standing beside the seat.

9. Distribution of pupils in the classroom. (1029)
Distribution of pupils in a large and a small room, the number and width of the aisles, with multiple benches.

10. Cleaning a classroom; clearing the floor. (1030)
This chart shows the width of desks and aisles, with a method of hinging the desk on one side to the floor for convenience in sweeping.

11. Full seat and middle seat system. (1031)
This system (a) has seat and back on the same platform; (b) has desk and seat on same platform, but uses the adjacent desk as back; (c) desk employs seat attached to it on the same platform with adjacent desk.

12. The Mittelholm system. (1032)

13. Double school bench with foot board. (1033)
School bench and desk, full size, with points for measuring height, distance, etc.

14. School bench with movable seat. (1034)
Simple movable seats, stationary desks. Metal frame of standards and bases with wood mountings for desk seat and back.

15. Home seats. (1035)
Adjustments on seat, desk, back and foot rest.

16. Postures in writing. (1036)
Proper and improper positions in seat for both vertical and slant writing.

Library chair; adapted from measurements of the Vienna School Expert Commission, by Dr. William H. Burnham. (1057)

Vienna School Expert Commission's desk, largest size. (1056)
This is a plain box desk with top adjustable to plus and minus distances, arranged so that only minus distance opens ink well for writing. Solid box seat with compound curve in both seat and back. The whole is mounted on a portable open frame.

Gauge for adjusting chairs and desks. (1052a)
This standard gauge consists of a stick, with an ordinary inch scale on one side, and on the other side a scale graduated to 11/16 inch divisions. On the stick slide cross arms, one for measuring the pupil in sitting posture, and the other for measuring the chair. The double scale automatically gives height of desk when height of chair is

determined. (*See* Boston Schoolhouse Dept., Annual Report, 1906, p. 86.)

Walter, Anton.—Schulzimmer-Einrichtung. 23 x 29½ in. (Loaned by the Library.) Walter. (1151)

This chart shows plans for arrangement of school furniture in relation to doors, windows, etc., in the schoolroom.

Walter, Anton.—Schulbank. 31 x 40 in. (Loaned by the Library.) Walter. (1152)

This chart gives working drawings for school seats and desks, of six different sizes, for pupils from 100 to 160 cm. in height. It gives also measurements for four different sizes. The height of seats for girls should be 1 cm. less than the chart indicates. These drawings are designed to enable any carpenter to build seats and desks adapted to the needs of children in rural districts.

"There is a definite conception in regard to the essential features of an hygienic seat and desk. The main points are as follows: (1) The height of the seat should equal the length of the child's leg from the bend of the knee to the sole of the foot. (2) The width of the seat should equal about three-quarters the length of the upper leg. (3) The seats should have a back-rest for the small of the back above the hip-bones opposite the last lumbar vertebra. This is especially important. (4) There should be a support for the back under the shoulders. (5) The seats should be sufficiently large to enable the child to change position, and the front edge of the seat should be a little higher than the back and rounded off. (6) The dimensions of the desk should be sufficient for the accommodation of books and the like. (7) The slope should be about 45 degrees for reading and 15 degrees for writing. (8) The *difference,* or distance from the seat to the edge of the desk, should be such that the child, when sitting erect, can easily place both arms on the desk without lowering or raising the shoulders. A convenient rule is that the difference should equal the distance from the seat-bone to the elbow plus 1.5 cm. (9) The distance of the seat from the desk may be zero, plus, or minus. For convenience in taking the seat and in standing a plus distance is required; for writing a minus distance of 2 inches is necessary. Such are the essential features, and there is practically a consensus of all authorities in regard to them. To insure them, both seat and desk must be adjustable to different heights. And it is of prime importance not only to have the seat of the right height, but also to have the correct difference and the proper distance, since upon these chiefly depends a correct sitting posture. That the distance may be plus for reading and minus for writing, it is necessary to have either a movable seat or a sliding desk. For obtaining a slope of 45 degrees for reading and 15 for writing, the desk must be adjustable to different angles; and an ideal seat would have a back-rest adjustable to the individual, such as some teachers' chairs are provided with. In a word, the seat and desk should be automatically adjustable

as regards height, difference, distance, backrest, and desk-slope." (Quoted from the article on School Hygiene by Wm. H. Burnham in Johnson's Cyclopedia, 1899. Vol. 10.)

243 *Drinking cups.*

Aseptic drinking cup. Gift of Am. Water Sup. Co. (1046)

Both folding and non-folding patterns, made from paraffine paper.

Purifold drinking cup. Gift of Burn. Mfg. Co. (1047)

Aseptic paper drinking cup, folding pattern.

Sunflower drinking cup. Gift of Meyer Bros. Dr. Co. (1051)

These cups are of the standard pattern, made of aluminum and covered with a metallic lid.

Finback drinking cup cabinet and cups. Loaned by Stone and Forsyth. (2042)

Home-made drinking cup.

249 *Miscellaneous apparatus.*

Sanitary pencil holder. Bardeen. (1494)

Fibre wastebasket. (1422)

Jacobus pneumatic ink-well. Gift of Jacobus Co. (1117)

Glass non-spillable ink-well for use in school desks. Arranged to hold the ink even when the desks are tipped over by janitor in sweeping.

Tannewitz ink-well. Gift of Tannewitz Co. (1832)

Liquid soap container. Gift of Stone & Forysth. (2043)

Rhoads' writing machine. Limeburner. (1919)

This is a device for writing with closed eyes, not for the blind, but to relieve those suffering from eye-strain or in danger of it.

25 Cleanliness

Scott Tissue Towels. (Gift of Scott Paper Co.) (1108)

In sanitary fixture. Designed to provide individual clean towels.

Paper towels. (Gift of Stone & Forsyth.) (2044)

Brushes. (Gift of the Somerville Brush Co.)

Sanitary bowl brush. (1220)
Radiator brush. (1221)
Wall brush, and handle. (1222)
Cotton duster. (1223)
Improved window brush. (1225)
Improved duster, called a "Dust catcher." (1224)

Cabinet for disinfecting books by moist hot air. (Ordered)

"The apparatus consists of a double walled case of galvanized iron. The space between the walls is filled with water. Heat is supplied from beneath. The shelves for the books are perforated or of wire. The moisture is supplied by water

dripping from the roof onto a flat dish of porous material which is soaked full and then gives up the water in the form of vapor. The thermometer and hair-hygrometer are fastened to the inside of the door, which is fitted with a glass pane so that they can be read." (L. B. Nice, *Ped. Sem.*, 1911. Vol. 18, p. 201.)

26 Hygienic Apparatus

Hygrodeik. Hohmann & Maurer. (1040)

An instrument for determining the humidity of the atmosphere by means of the wet and dry bulb thermometers. By adjusting sliding pieces to the height of the mercury in the two thermometers, an index is made to point to a number on a standard chart, indicating the humidity of the atmosphere.

Hygrometer. Kny-Scheerer. (2055)

Pettersson-Palmqvist apparatus for determining carbon dioxide. (1044)

"The instrument consists of a measuring vessel, A,* connected with a U-shaped burette, B, from which communication can be made by a small stop-cock, b, a manometer fg, containing a graduated scale nearly horizontal; and two stop-cocks, f and g, by means of which communication can be made with the air. One side of the manometer, f, is in communication with the measuring vessel A. The burette, B, contains a saturated solution of caustic potash (KOH). The flask, E, contains mercury, and by raising it when the stop-cock, c, is open, the mercury will rise in the flask, A, and the air will be forced out. If the flask, E, be lowered, the mercury will flow from the measuring tube, and the amount of air entering A can be measured by the gradations. When the measuring tube, A, is full of air, the stop-cocks, c, b, f, and g, being open, the position of the drop of liquid in the horizontal tube of the manometer is accurately read. The stop-cocks, c, b, f, and g are closed, that at b, opened, and the vessel, E, raised, driving the air out of the measuring tube, A, into the absorption burette, B. This operation of raising and lowering the flask, E, is repeated several times; it is then lowered, and the air is drawn over into the measuring burette; the cock, a, is then opened, and the vessel E manipulated until the reading on the horizontal scale agrees with that in the beginning of the test. The reading of the graduated tube A, gives directly the amount of carbon dioxide. The determinations are made with air of ordinary humidity, and there is a slight correction due to this fact, which is not likely to equal, in any case, one part of carbon dioxide in one million parts of air." (R. C. Carpenter, "Heating and Ventilating Buildings." Quoted by W. E. McGown in *Ped. Sem.*, 1910, v. 17, p. 487.)

Thermograph, Self-recording.—7 days. Cambridge B. S. Co. (1863)

Scale reads from -30 to 110 F., subdivided into 1-5 degrees.

Barograph, Self-recording barometer.—8 days. Cambridge B. S. Co. (1862)

* The lettering that follows refers to the cut of the instrument which has not been reproduced here.

Thermometer, Weather report. Queen. (1869)

Ozonator. Gen. Elec. Co. (1864)

A small ozone generator to destroy odors and purify the air.

Psychrometer, Sling. Hohmann & Maurer. (1154)

This instrument consists of a wet and dry bulb thermometer, provided with a handle, which permits the thermometers to be whirled rapidly; the bulbs being thus strongly affected by the temperature and moisture of the air, the humidity can be quickly determined.

Barometer, School. Cambridge B. S. Co. (1483)

Aluminum scale, graduated into the Metric and English systems.

Rendtorff air thermometer. Cambridge B. S. Co. (1484)

Wolpert, H.—Original Carbacidometer. Bad. Lehr. Co. (893)

Apparatus for testing the amount of carbon dioxide in the air. Simple pamphlet text accompanies the set. The apparatus is equally serviceable in the home and in the school room.

Lambrecht's Polymeter. Stechert. (1987)

A widely used German hygrometer.

Sanifacient Humidifier. Sanifacient H. Co. (1918)

This apparatus consists of a reel, covered with cloth, adjusted so that it dips into a tank of water when revolved by an electric fan. It is used especially for humidifying the air in large store-rooms for tobacco, but will provide sufficient moisture for humidifying an ordinary small schoolroom.

Anemometer, Hicks. Cambridge B. C. Co. (1861)

An instrument for measuring the velocity of the wind. This anemometer has 6 dials, reading to 10,000,000 feet, with disconnector for fly-wheel.

Pleier's Raumwinkelmesser. Schmidt & H. (1947)

An apparatus for testing the light at a school desk by measuring the "area-angle," i. e., the area of the sky in "square-degrees" that sends light to the desk, reduced to a horizontal plane with regard to the angle of incidence of the light.

3 HYGIENE OF THE CHILD

31 Growth and Physiological Age

6 models of various stages of gestation. Bad. Lehr. A. (1948-1953)

1. Embryo about 6 weeks old, considerably enlarged. (1948)
2. Uterus with embryo in first month of gestation. (1949)
3. Uterus with embryo in third month of gestation. (1950)
4. Uterus with foetus (pelvic presentation) in 4-5 month. (1951)
5. Uterus with foetus (breech presentation) in 5th month. (1952)
6. Uterus with foetus (normal presentation, placenta with umbilical cord visible). (1953)

Human anatomical model (female). Gresham. (2025)

A life-size reproduction of the dissections of the various parts of the human body, showing the relations of internal organs to one another as well as the interior of the uterus and its contents at the different stages of pregnancy.

X-ray photographs (16) *of the carpal bones and epiphyses of the wrist and hand at different stages of osseous development* (taken by Dr. T. M. Rotch of Harvard University). 8 x 10 in. and 10 x 12 in. (1715-1716)

Such illustrations of the development in the wrist and hand are supposed to be correlated with the general physical development and may be used, in the opinion of Dr. Rotch, as signs of physiological age. (Rotch, T. M. Roentgen ray methods applied to the grading of early life. Proc. 4th Cong. Am. Sch. Hyg. Assoc., 1910, pp. 184-199.)

Figures showing the physical proportions of children at different ages according to the canons of Geyer and others. (2026-2040)

Boy half a year old. (2026)
Boy one year old. (2027)
Boy three years old. (2028)
Geyer's canon for boy three years old. (2029)
Boy six years old. (2030)
Girl four to five years old. (2031)
Geyer's canon for seven-year-old boy. (2032)
Boy seven years old. (2033)
Boy ten years old. (2034)
Geyer's canon for ten-year-old girl. (2035)
Girl eleven years old. (2036)
Boy twelve years old. (2037)
Geyer's canon for twelve-year-old girl. (2038)
Normal stages of development in youth according to Geyer. (2039)
The proportions of growth. (2040)

Tables of growth, by Dr. Franz Boas. (2045-2048)

1. Physiological development. (2045)

2. Annual increments for different parts of the body. (2046)

3. Absolute measurements for New England school children. Males. (2047)

4. Absolute measurements for New England school children. Females. (2048)

(See the article on Growth in Monroe's Cyclopedia of Education, vol. 3. N. Y., Macmillan, 1912).

Burgerstein, Leo.—Wandtafeln zur Schulhygiene. 39½ x 55 in. K. k. Schulb. V. (1016a-1016b)

Chart A, Morbidity. (1016a)

Growth in weight and height, study period and sleep; curves show the relative increase in height and weight between the ages of 12 to 20 inclusive. "Key of Stockholm investigated morbidity, increase in height and weight, study periods and sleep in the High School pupils of Sweden. He utilized the method of Hertel of Kopenhagen. The data secured came from over eleven thousand pupils. The details of this investigation are here charted by Burgerstein. He shows in figure

No. 1, Chart 'A,' among other things, that the percentage of morbidity increases up to fourteen years of age and then decreases up to seventeen years, and then increases to the end of the high school period. He states that these curves may be accepted as representing not only conditions existing in Sweden but conditions as they exist generally; and that the requirements of school work should take into consideration the natural fluctuations of the resistance of the individual against permanently harmful influences and that special care should be taken in arranging school work to prevent the increase of morbidity during the prepubescent period.

"Figure Two, Chart 'A,' shows that the total working period (recitation and study) among the Swedish children investigated by Key is on the average almost seven hours a day for eleven-year-old pupils, and is over eleven hours daily for the pupils in the highest classical and scientific classes; and that, throughout, the average periods of sleep are more than one hour too short—'nine hours for pupils eleven years old, and seven hours for pupils nineteen years old.' These conditions are admitted to be local, but Burgerstein points out the fact that scanty local reports made in other countries lead one to assume that the total day's work is frequently too much and the amount of sleep is frequently too little.

"The text under Chart 'A' further brings out general additional interesting facts. First, in general the pupils in Key's investigation who worked in excess of the average number of hours daily showed a higher morbidity by 3.2% than those pupils who worked less than the average number of hours. (In Stockholm this difference was 5.2%.) Second, the pupils who spent less than the average amount of time in home study included 52.2% of those pupils who had difficulty in keeping up with their classes. The pupils who work overtime appear to be the more capable pupils. The text states that Key found that only those pupils get enough sleep who sit in classes that are considerably lower than the class prescribed for their ages." (T. A. Storey, *Ped. Sem.*, 1911. Vol. 18, p. 104.)

Chart B, influence of season upon resistance to diseases and upon growth. Curves cover all the months except August and September, for the first eight grades of school. (1016b)

"This chart is made up of three parts. (1) A dotted curve represents the admissions by months to five hospitals for children in Vienna for the years from 1898 to 1904, and covers 40,144 cases in total. (2) A heavy lined curve represents the absences by months from school in a small Austrian city. The pupils were between eleven and fifteen years of age.

"The curve of morbidity is based on hospital returns for children of both sexes between the ages of 0 and 14 years who came from the poorer classes in a large city. The curve for absences is based on returns from pupils between the ages of eleven and fifteen coming from better homes, and attending boys' schools in a small city. In spite of the variety of conditions concerned both curves show from a hygienic point of view, unfavorable periods of the year for Central Europe. The greatest number of admissions to the children's hospitals and the greatest number of absences from school occurred near the end of the calendar year and during March and April.

"(3) The third set of facts presented in Chart 'B' refer to the variations in gains in weight in a group of one hundred girls observed by Hanssen. These girls were from six to sixteen years old. They were weighed once each quarter for five years. The results of these observations are plotted on the chart and show that the greatest gains came during July and August, the vacation period, and that the gains decreased from September to June in the school period. These facts are taken to indicate a need for a vacation during the month of December and another in March or April." (T. A. Storey, *Ped. Sem.*, March, 1911. Vol. 18, p. 105.)

32 POSTURE

Goldthwait, Joel E.—Photographs illustrating erect posture and malpositions.—6 photographs. 21 x 30 in. (930a-930f)

(See Goldthwait's "Relation of posture to human efficiency," etc., p. 16 et seq.)

A. Man standing in slouch position, a departure from the normal pose with flexion of the knees and absence of lumbar curvature. (930a)

"There are many variations of these met with which demand consideration if anything approaching normal health is the standard desired in the treatment of these individuals."

B. Boy standing with hands in pocket. (930b)

"If we leave the habit of standing with the hands in the low trousers pockets uncorrected, our treatment of the round shoulder will avail little, because in this position the shoulders must drag forward and the chest must be flattened."

C and D. Early Greek figures, erect, side and front views. (930c, 930d)

"The head is erect and in such balance that all the muscles must be in easy contraction, making possible any movement forward, backward or sidewise. . . . The shoulders are erect, in which position all the muscles are in easy contraction. . . . So, also, of the legs, there is no strain, but every part is ready for full duty with the least waste in either time or energy."

E. Figure of a modern athlete. (930e)

"As finely balanced as any of the early Greeks. . . . It is not to be wondered at that such a type is able to win events from less well-poised competitors."

F. St. Gaudens' figure of Lincoln. (930f)

". . . which is remarkable in that even though the figure is depicted in repose, with one knee relaxed, the trunk is perfectly erect so that the poise of the head is free from strain and the visceral function, or support, can in no way be disturbed."

Spinal curvature. (1485)

47 photographs from the Children's Hospital, Boston, showing spinal curvature.

Manual training charts. Beijers. (994a-994o)

16 charts in black and white. These charts show proper positions while working with various tools in manual training room, with one chart (No. 16) showing effects of malpositions.

Posture at desk. (1050)

Chart shows two common malpositions in writing, with the type of temporary lateral spinal curvature accompanying each.

Brillengeradhalter nach Müller. (1045)

An instrument in the form of open spectacles for pupil to wear, to prevent lowering the head over the desk while reading or studying. Arranged to close the visual opening automatically when the head is lowered.

33 Eye

Cohn, Hermann.—Täfelchen zur Prüfung der Sehleistung und Sehschärfe. (Loaned by the Library.) Priebatsch. (1041)

A simple device for displaying the letter E in various positions in testing the child's visual acuity. Brief test gives tables and discussion on the use of the device.

Fürst, M.—Sehprüfungstafel. Voss. (1058)

Folding slate crayon book with graduations and distances at which child should distinguish white on black as will be required in blackboard work.

Pflüger—Sehproben und Sehprüfung. Optotypi Pflüger. 2. Aufl. Sallmann. (1020)

A set of charts for testing visual acuity, employing the letter E in various positions and sizes from those almost microscopic to 15 cm. in length, with chartings of the distance at which a normal eye should distinguish them. Accompanying the charts also is a wooden letter E, 6 cm. by 8 cm., for use in the same manner as the charts.

McCallie, J. M. Eye tests for the illiterate (10 cards).

McCallie, J. M. Eye tests for the literate (12 cards).

Seggel, K. L. F.—Sehproben-Tafeln zur Prüfung des Lichtsinns. (Loaned by the Library.) Riedel. (1042)

Charts with black letters on a white ground and with black letters on light, medium and dark gray grounds. There is also a brief discussion, with tables for calculating visual acuity with varying degrees of contrast. Put up in booklet form, with charts as folded inserts.

Snellen's vision chart for schools. Hardy. (1416)

Roethlein, B. E. Relative legibility of different faces of printing types. (1412)

Allport, Frank E.

Four pamphlets on the eyes and ears of school children, with proof of vision chart. (1420)

17 lantern slides.

34 Ear

See 33 Eye. Allport's pamphlets.

35 Voice, Nose, Throat, and Teeth

Model of the larynx, with tongue. Stechert. (36)

Model of a tooth, much enlarged. Montaudon. (Ordered)

8 plaster of Paris models showing normal and malocclusion of the teeth. Roberts. (1977-1984)

The different forms of malocclusion are represented by models made from actual cases, according to Dr. Angle's classification, under the direction of Dr. Lawrence W. Baker of Harvard University.

Jessen.—Sound and decayed teeth. (*Wandtafel über gesunde und kranke Zähne.*) 23¼ x 39¼ in. Lehmann. (70)

This chart shows (a) milk-teeth and permanent teeth, with tables of age at which the units of each set should appear; (b) superposition of the two sets in growth; (c) various stages of tooth decay; (d) a mouth of decayed teeth, with the same set after having been scientifically treated; (e) some supernumerous growths of teeth in young children and results of lack of care of teeth.

Framed photograph of girl showing facial distortion caused by poor, neglected teeth. 24¾ x 30½ in. Educ. Ex. Co. (1888)

Framed photograph of the same girl showing improvement resulting from treatment for distortion of teeth. 24¾ x 30½ in. Educ. Ex. Co. (1889)

4 lantern slides on the teeth.

36 Diseases, First Aid, etc.

Eschner.—First aid for accidents. 88 x 66 cm. Wachsmuth.

1. *First aid for fractures and wounds.* (Die erste Hilfe bei Knockenbruch und Verwundungen.) Bandaging wounds and broken bones by emergency methods. (327)

2. *Artificial respiration.* (Die künstliche Atmung.) Resuscitation of the drowning, fainting, etc., according to the Sylvester method of procedure. (328)

First aid box for schools. (*Verbandkasten für Schulen.*) Arnold. (490)

Conveniences for giving first aid to injuries of various kinds, put up in a neat closed box, 5 x 9 x 12 inches. Contains 17 articles, including large bandage cloth, prepared aseptic bandages of mull, cambric, and gauze, medicated cloths for flesh wounds, medicated and aseptic cottons, vials of liniments and disinfectants, medicated salve, gutta percha paper, adhesive tape, pins, etc. The whole kit is for schools, is inexpensive, and in convenient form for emergency use.

American Red Cross First Aid Box. School size. Amer. Red Cross. (1994)

American Red Cross First Aid Charts. 5 charts. 20 x 28 in. Amer. Red Cross. (1989-1993)

1. Skeleton. (1989)
2. Muscles. (1990)
3. Circulation. (1991)
4. Fracture and dislocation. (1992)
5. Arteries and points of pressure for controlling hemorrhages. (1993)

Lantern slides.

6 lantern slides on children's diseases.

6 lantern slides on hookworm disease.

361 *Scarlatina.—Chart* showing ratio of morbidity and ratio of mortality of scarlintina in Boston per 10,000 of the population, from 1886 to 1909, inclusive. 42 x 61½ in. (Boston City Hospital, South Department, January, 1910. Chart F.) (1039)

Shows in addition, average ratio of morbidity and mortality in Boston, 1886-1894, and 1895-1909. The ratio of morbidity for these two periods decreased 6.97 and the ratio of mortality decreased 1.26.

Chart showing ratio of mortality of scarlatina per 10,000 of the population in Boston, for sixty-nine years, 1841-1909, inclusive. (Boston City Hospital, South Department, January, 1910. Chart E.) (1010)

Appended note: "Since 1895 when the South Department was opened there has been no general epidemic of scarlatina in Boston as compared with previous years." This chart also shows that during the 33 years since 1876 no year has had a ratio of mortality of scarlatina above 6 per 10,000, whereas during the 36 years immediately preceding, 27 years had a ratio above 6 per 10,000. On the other hand, during the 36 years, 1841-1876, but one year (1865) shows ratio of mortality below 3 per 10,000, while since 1876, 23 years have been below 3 per 10,000 and 9 years have been below 1 per 10,000 of the population.

See also 362 Diphtheria, *and* 369 Diseases, Trumpp's chart.

362 *Diphtheria.—Chart* showing cases of diphtheria and scarlatina in Boston, by months, reported to the Board of Health from 1890 to 1909. 42 x 56 in. (Boston City Hospital, 1910. Chart G.) (1009)

Summated by months, showing the summer depression of the curves of morbidity.

Chart based on the report of the Public Health and Marine-Hospital Service for the six largest cities in the U. S. in 1908. 42 x 42 in. (Monthly Report of the State Board of Health of Massachusetts, September, 1910, page 400.) (1019)

Both diphtheria and scarlatina curves show a drop from 3,000 and 6,000 respectively to 1,600 and 1,300 during the first two months of vacation, with a characteristic rise, especially in the case of diphtheria, during the month of October.

Chart based on U. S. Census reports, showing monthly incidence of diphtheria. 42 x 61½ in. (Monthly Bulletin of the State Board of Health of Massachusetts, September, 1910, page 399.) (1038)

This chart presents two curves, one for school children, 5 to 14 years, and the other for children from birth to 5 years. The two are similar, showing a very much lower ratio in vacation months than in school months.

Chart showing per cent of mortality of diphtheria at the Boston City Hospital proper, and at the South Department, from 1888 to 1909. 42 x 44 in. (Boston City Hospital, January, 1910. Chart A.) (1013)

This chart shows the decrease in the per cent of mortality from diphtheria since the introduction of antitoxin in 1894 to be from nearly 40% for the six years 1889-1894, to less than 4% for the six years 1904-1909.

Chart showing ratio of the mortality of diphtheria per 10,000 of the population in Boston from 1876 to 1909. (Boston City Hospital, January, 1910. Chart C.) (1014)

This chart shows decrease from 18.2 to 1.8 during the years 1894 to 1909 under the use of antitoxin with average ratio of mortality from 1876 to 1894 of 14.25 and from 1895 to 1909 of 5.17.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and Brooklyn from 1886 to 1908, inclusive. 42 x 48 in. (Boston City Hospital, South Department, January, 1910. Chart I.). (1012)

This chart shows a decrease in mortality for the period 1894 to 1908 for Boston, of 18.2 to 3.2 and for Brooklyn, 12.2 to 3.6.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and New York (old city) from 1886 to 1908. 42 x 48½ in. (Boston City Hospital, January, 1910. Chart H.) (1008)

This chart shows a decrease in the ratio of mortality for diphtheria under use of antitoxin from 1894 to 1908 for Boston, 18.2 to 3.2, for New York 12.2 to 4.3.

Chart showing ratio of mortality of diphtheria per 10,000 of the population in Boston and Philadelphia from 1886 to 1908, inclusive. 42 x 47 in. (Boston City Hospital, South Department, January, 1910. Chart K.) (1011)

This chart shows a decrease in the ratio of mortality since the introduction of antitoxin, 1894 to 1908, for Boston, from 18.2 to 3.2, Philadelphia from 9.3 to 3.3

See also 369 Diseases, Trumpp's chart.

363 *Measles*

See 369 Diseases, Trumpp's chart.

364 *Typhoid fever*

Map of Florin Village, Lancaster Co., Penna., showing schematically source of typhoid infection. Scale: 150 feet to the inch. 21½ x 27 in. Gift of Dr. S. G. Dixon. (1437)

Cross section of cesspool and well in Florin Village, Lancaster Co., Penna., showing source of typhoid infection. Scale: Horizontal and vertical, 10 feet to the inch. 21½ x 27 in. Gift of Dr. S. G. Dixon. (1438)

369 *Miscellaneous*

Trumpp, J.—Die ansteckenden Kinderkrankheiten in Wort und Bild. 100 x 60 cm. Lehmann. (32)

Wall chart in colors, with discussions showing: Figs. 1-2, Measles in mouth, throat and body; Fig. 3, German measles,

eruptions on face and neck; Figs. 4-5a, Scarlatina on face and body and in throat; Fig. 6, Diphtheria in mouth and throat; Fig. 7, Chickenpox on back and face; Fig. 8, Smallpox, eruptions on back and head. There is also a text discussion of the symptoms, period of incidence, time of exclusion of the convalescents, etc., of each of these diseases, and in addition, of whooping-cough, influenza, typhoid fever, and mumps. The text is printed on and forms part of the wall chart.

Refining and concentrating antitoxins in the Lederle Antitoxin Laboratories. 16 x 39½ in. Gift of Schieffelin. (1200)

Glass-covered case containing samples of the different antitoxins in the different stages of their preparation.

37 EFFECTS OF ALCOHOL

Cabot, Richard & Horsley, Victor, Compilers.—Decreasing medical use of alcohol.—(Chart based on statistics from Massachusetts General Hospital, Boston, and on reports from the London County asylums.) 22½ x 28½ in. Scient. Temp. Fed. (183)

This chart shows that in the London Country asylums the use of malt liquors has decreased to about 1/160 of its former use. The use of wines and spirits has also decreased, while during the same period the staff and patients have increased. In the Massachusetts General Hospital the decrease in the use of drugs from 1898 to 1907 has been 45.2% and of alcoholic liquors has been 77.7% during the same period. "It indicates a rapid and striking change among the members of the hospital staff, especially in the last five years, when it has become generally known that alcohol is not a stimulant, but a narcotic, and that drugs can cure only about one-half a dozen of the diseases against which we are contending." (Cabot, Richard. *Boston Medical and Surgical Journal,* April 15, 1909.)

Demme—Alcoholism and degeneration.—Investigation made by Prof. Demme, Bern, 1878 1889. (From Ueber den Einfluss des Alkohol auf den Organismus des Kindes. Stuttgart, F. Enke, 1891.) 22½ x 28½ in. Scient. Temp. Fed. (181)

Shows the proportion of physical and mental deformity in 10 very temperate families and 10 very intemperate families. Among the temperate families, of 61 children 82% are normal and 18% defective. Among the intemperate families, of 57 children 17.5% are normal and 82.5% are defective.

Gruber, Max & Kraepelin, Emil, Editors.—Wandtafeln zur Alkoholfrage. 100 x 78 cm. Lehmann. (30a-30j)

1. Expenditure for spirituous liquor among workmen. (30a)

This chart shows the relative expenditure for food, clothing, books, liquors, etc., in families with large, medium and small incomes, and the way in which it varies in the large and small families.

2. Price and value of the most important foods. (30b)

This shows the amount of food value in proteids, carbohydrates and fats which can be purchased for one Mark in the

various food products, including wines and liquors, also the relative amount of food, water and waste in a given amount of various foods.

3. Alcohol and degeneration. (30c)

The first part of this chart is from the same study as Demme's, given above. The third part is Arrivé's study of the influence of alcohol on depopulation, based on 81 drinking and 245 temperate families, having respectively 433 and 847 children. The infant mortality of the two groups are, before birth, 11.5% and 6.6%; at birth, 4.6% and 2.6%; between birth and the sixth year, 33.5% and 21.1%; living at six years of age, 50.4% and 69.7%. The second is Bunge's study of the effect of alcohol on tendencies of children to tuberculosis and nervous and mental diseases even when the parents show none of these tendencies.

4. Influence of alcohol and tea on the adding of numbers of one place. (Kraepelin's method.) (30d)

This chart shows three curves: one of the rate of addition under the influence of no artificial stimulation; second, under stimulation by alcohol; third, under stimulation by tea. During the first half hour no stimulants are taken. The three curves are close together with a range of only 705 to 720. Fifteen minutes later the range is 699 to 846, with alcohol and tea respectively in the extremes, the effect of the former being to decrease the amount of work done, that of the latter to increase it.

5. Influence of daily indulgence in alcohol on ability to add figures. (30e)

This chart represents the amount of addition two people did each morning for 27 days. During the first 6 days neither took stimulation. There is rapid improvement in each. Then for 12 days the one who had been making the highest average began to take alcohol. The one not indulging soon became superior and continued to improve while the other soon reached a maximum and declined. The influence was marked.

6. Alcohol and school. (30f)

From R. Hecker's study of the use and influence of alcohol among 4,582 children in the people's schools in Munich. (Jahrbuch für Kinderheilkunde, N. F., v. 63, p. 470.) This chart shows the per cent of children who never use liquor, who drink irregularly, and who drink daily. The per cent of each which do good, medium, and poor work, is also shown, and the relation which each group bears to the entire number of children studied.

7. Alcohol and mortality. (30g)

This chart is based on Westergaard's study of mortality and morbidity. The chart shows that for every 1,000 general deaths the rate would be 953 for professional men, 1,642 for hotel and barkeepers, and 1,725 for waiters. The rate for each profession in each of the common diseases is also shown. The chart also gives expectation and actual mortality in the class of abstainers in English life insurance companies. A third section of the chart shows the rate for each of the callings dying at the various ages from 20 to 65.

8. Alcohol and personal violence. (30h)

This chart represents cases from Kürz's study on the Prophylaxis of Brutal Crimes. (Zur Prophylaxe der Roheitsdelikte, *Monatsschrift für Kriminalpsychologie*, II, 27.) The first part represents the proportion of 1,143 assault cases occurring on each of the days of the week, holidays included with Sundays. The second part represents the proportion of 1,715 cases of assault occurring in the taverns (742), dwelling-houses (86), street (98), places of work (87), place not determined (102).

9. Alcohol and crime. (30i)

This chart is from Baer's study of alcohol and crime, based upon 17,155 cases in reformatories and 7,392 cases in penitentiaries. The chart shows the per cent of convicts for each of the various crimes who were moderate drinkers and who were habitual drinkers. It is interesting to note that among cases of immorality and crimes against persons moderate drinkers are in greater number, while habitual drinkers are found guilty more often of crimes against property, arson, etc.

10. Life history of a common drunkard from birth to his entrance to the insane asylum at the age of 46. (30j)

This chart shows every month from 1860 to 1906, giving time spent at liberty, in jails, prisons, penitentiaries, workhouses, and his final entrance to the asylum. First incarceration is July, 1878, second in August of the same year. After that the longest unbroken period of liberty was from July, 1894, to January, 1896, which followed but for two short detentions the longest single imprisonment, from June, 1892, to June, 1894. In all the chart shows 56 imprisonments upon various charges.

MacNicholl, T. Alexander, Compiler.—Alcohol and disabilities of school children. (From *Journal of American Medical Association, February 2*, 1907.) 22½ x 28½ in. Scient. Temp. Fed. (182)

A study of mental dullness and nervous and organic diseases based on 3,711 children of 1,100 families. Mental dullness in children of drinking parents but abstaining grandparents, 73%; in children of abstaining parents but drinking grandparents, 78%; in children where both parents and grandparents are abstaining, 4%. Nervous and organic diseases in children having hereditary alcoholic taint, 77%; in children free from alcoholic taint, 18%.

Schnyder, L.—"Do you work hard?" Alcohol and muscle work.—Ergographic experiments in muscle fatigue. (From Alkohol und Muskelkraft. Bonn, Emil Strauss, 1910.) 22½ x 28½ in. Scient. Temp. Fed. (180)

Shows the comparative amount of work done in ten days without alcohol and in ten days with alcohol.

39 MISCELLANEOUS

"Dont's" for children.—Card, "Remember these things," posted in public schools in Providence, R. I. 24½ x 30½ in. Ed. Ex. Co. (1890)

4 MENTAL HYGIENE AND THE HYGIENE OF INSTRUCTION

41 Psychological Age

42 Mental Hygiene

15 *lantern slides* on the brain and nervous system. Williams, Brown & Earle.

43 Fatigue

Adsersen's chart.—(*Körpertemperatur und Hautsensibilität*) showing variations in dermal sensitivity tested by the aesthesiometer as compared with diurnal variations in bodily temperature. (1043)

44 Period of Study, etc.

Burgerstein, Leo—Wandtafeln zur Schulhygiene. 39½ x 55½ in. K. k. Schulb. V. (1016c)

Chart C. Influence of afternoon sessions on morbidity and voluntary attention. "Fig. One in Chart 'C' presents the results of the investigations of Schmidt-Monnard of Halle upon several thousand boys and girls in middle class schools. The figure shows that anemia, habitual headache, nervousness, insomnia, lack of appetite, etc., were more common among children with afternoon sessions than with children with morning sessions. These complaints were generally more common among the girls than among the boys.

"Figure Two in Chart 'C' illustrates the result of Schuyten's observations in the public schools of Antwerp. These observations were made daily and cover over six hundred children between the ages of seven and fourteen years for a period of two years. They indicate that the percentage of cases showing voluntary attention was greater in the morning sessions than in the afternoon sessions, save in May, June and July. During these months the noon hour is more favorable for recreation and play. Schuyten regards this as an explanation for the increased afternoon attention in May, June and July." (T. A. Storey, *Ped. Sem.*, March, 1911. Vol. 18, p 105.)

45 Grading

Johnson, G. E. Partial perspective of public education in Pittsburgh. (1037)

This chart has special reference to physical exercises, playground associations, amusement parks, day nurseries, vacation schools, with special reference also to the type of activity for the various ages and leading to the various occupations. The chart is also suggestive as to the best physical and mental preparation for courses in high schools, evening schools, special schools, colleges, and universities.

Sonderklassen-System der Mannheimer Volksschule. (Internat. Kong. f. Schulhygiene, 1904. 4 Bd. S. 210.) (1015)

Shows the system of grading in the Mannheim Volksschule with diagrammatical sketch of the system of regular and irregular promotions, demotions and repetitions.

46 Physical Exercise

Schmidt, F. A.—Influence and results of physical exercises in youth. 22½ x 30½ in. Büxenstein. (1048)

Shows various physical exercises for securing strength, skill, quickness, endurance, alertness, etc., with the physiological effects on lungs, heart, circulation, metabolism, muscles, nerves, etc., together with lasting bodily, moral and aesthetic gain for each kind. Verbal statement, not diagrammatical. (Loaned by Dr. W. H. Burnham.)

Schmidt, F. A.—Summary of the physical exercises most beneficial at the different ages of life. Bonn, n. d. (1018)

Shows physiological character and prevailing needs of exercises for ages in five triennial periods, 6 to 20 years; also the specific kinds of exercises which satisfy these needs and diagrammatically the age at which each exercise should be begun and discontinued. The shading shows the amount of the various exercises suitable for the different ages. (Loaned by Dr. W. H. Burnham.)

Johnson, G. E.—Summary of active plays and games most beneficial at different ages, adapted from Dr. F. A. Schmidt's chart of physical exercises. (1017)

This chart gives specific games for securing the kinds of exercise recommended by Dr. Schmidt (see above), and shows diagrammatically by triennial periods up to 20 years the age at which each should be emphasized. Done in blue print, 30 x 60 inches. (Loaned by Dr. W. H. Burnham.)

Rothfeld's Schulturnbefreiungstafel. Müller. (2023)

The department of Psychology in the University has a large collection of psychological apparatus important in the study of mental hygiene, but the Museum makes no attempt to duplicate this nor the neurological material in the department of Biology. In other departments of the Museum there are also some things related to the subject of hygiene but not mentioned here. It is hoped that catalogues of the rest of the collection will be prepared later. The material of the Museum is largely available for teachers and the writers would request the co-operation of teachers and others, and specially request information when old desks and seats and the like are to be disposed of as such material is often valuable to the Museum.

The writers wish to express their indebtedness to President G. Stanley Hall, who conceived the original plan of the Museum and collected a large part of the material, for his constant advice and encouragement in regard to its development, to Dr. Louis N. Wilson for valuable suggestions, to Dr. Leroy W. Sackett and Mr. Kirkman K. Robinson for assistance in describing the charts mentioned above, and to many others who have rendered valuable aid.

ADDRESSES OF FIRMS

The names and addresses of the firms mentioned in the text are given below. For further information in regard to illustrative material one may well consult the "Bibliotheca Paedagogica," a trade list of models, charts and the like offered for sale by German publishers. This catalogue is sold by G. E. Stechert & Co., at a cost of about forty-five cents.

Where no firm is mentioned in the text, the material was usually made at Clark University.

American Red Cross, 715 Union Trust Building, Washington, D. C.
American Seating Co., 70 Franklin St., Boston, Mass.
American Water Supply Co., 251 Causeway St., Boston, Mass.
Arnold, Max, Chemnitz, Germany.
Bad. Lehrmittel Anstalt. Inhaber: Otto Pezoldt, Karlsruhe i. B., Kaiserstrasse 14, Germany.
Bardeen, C. W., Syracuse, N. Y.
Beijers, F. & G., Stockholm, Sweden.
Boston Schoolhouse Commission, 120 Boylston St., Boston, Mass.
Brayton, George, 1074 Boylston St., Boston, Mass.
Burnitol Manufacturing Co., 39 Sudbury St., Boston, Mass.
Büxenstein, W., Bonn, Germany.
Cambridge Botanical Supply Co., Cambridge, Mass.
Chandler Seating Co.
Cobe, Myer, 120 Boylston St., Boston, Mass.
Dixon, Dr. Samuel G., Department of Health, Harrisburg, Pa.
Educational Exhibition Co., 70 Waterman St., Providence, R. I.
Foltz & Fuller, Inc., 417 Ninth St. W., Washington, D. C.
General Electric Co., Schenectady, N. Y.
Gresham Publishing Co., 34 Southampton St., London, England.
Hardy, F. A., & Co., 131 Wabash Ave., Chicago, Ill.
Harvard Apparatus Co. Back Bay P. O., Boston, Mass.
Hohmann & Maurer Manufacturing Co., Rochester, N. Y.
International Instrument Co., 23 Church St., Cambridge, Mass.
Jacobus Pneumatic Ink-well Co., 16 Exchange Place, New York City.
K. k. Schulbücher-Verlag, Wien, Austria.
Kleine, George, 161 No. State St., Chicago, Ill.
Kny-Scheerer Co., 404 W. 27th St., New York City.
Langslow, Fowler Co., Rochester, N. Y.
Lehmann, J. H., München, Germany.
Limeburner, J. E., Co., 1720 Chestnut St., Philadelphia, Pa.
Longfellow, A. W., 1124 Tremont Building, Boston, Mass.
McCormick, Elizabeth, Memorial Fund, 315 Plymouth Court, Chicago, Ill.
Makepeace, B. L., 387 Washington St., Boston, Mass.
Montaudon, Jean, 56, Rue de Vaugirard, Paris, France.
Müller, P. Johannes, Charlottenburg, Spandauerstr. 10a, Germany.
Paulin, Henri, et Cie., Paris, France.
Plumer, Charles A., 17 Whiting St., Roxbury, Mass.
Priebatsch's Buchhandlung, Breslau, Germany.
Queen & Co., 1211 Arch St., Philadelphia, Pa.
Meyer Brothers Drug Co., St. Louis, Mo.

Riedel, Theodor, München, Germany.
Roberts, W. N., 206 Pierce Building, Copley Square, Boston, Mass.
Sallmann, Carl, Basel, Switzerland.
Sanifacient Humidor Co., 308 W. Randolph St., Chicago, Ill.
Schieffelin & Co., 170 William St., New York City.
Schmidt & Haensch, Berlin, S. 42, Prinzessinnenstr. 16, Germany.
Scientific Temperance Federation, 23 Trull St., Boston, Mass.
Scott Paper Co., Seventh & Glenwood Ave., Philadelphia, Pa.
Single Service Package Corporation, 71 Broadway, New York City.
Somerville Brush Co., 236 Washington St., Somerville, Mass.
Stechert, G. E., & Co., 121 W. 25th St., New York City.
Stone & Forsyth, 67 Kingston St., Boston, Mass.
Sturgis, R. Clipston, 120 Boylston St., Boston, Mass.
Tannewitz Works, Grand Rapids, Mich.
U. S. Department of Agriculture, Washington, D. C.
Voss, Leopold, Hamburg, Germany.
Wachsmuth, F. E., Leipzig, Germany.
Walter, Anton, Dornbirn, Germany.
Williams, Brown & Earle, 918 Chestnut St., Philadelphia, Pa.

BOOK NOTES

Ricerche psicologiche sperimentale sugli alunni molto intelligenti, by A Ieronutti. 15 p.

I Songi dei bambini di tre anni. L' inizio dell' attività onirica, by S. Doglia and F. Banchieri. 9 p.

Un audimuto educato. Contributo alla conoscienza dell' audimutismo, by O. Caporali. 31 p.

Contributi psicologici del Laboratorio di Psicologia Sperimentale della K. Universita di Roma. Vol. I, 1910-1911. Presso il Laboratorio di Psicologia, Roma, 1912.

Sogni dei bambini di cinque anni, by F. Banchieri. Rivista di Psicologia. Luglio, Agosto, 1912. Vol. 8, pp. 325-350.

It is interesting to note that among the twenty-three papers included in "Contributions from the Laboratory of Experimental Psychology of the University of Rome" eight are studies of children, of which five deal with defective and three with normal children. The three above noted are of special interest. The first of these, "Experimental investigations upon very intelligent children," was carried out with forty-one children, seven boys and thirty-one girls, selected from 1,189 girls and 299 boys of the public schools and kindergartens of Rome. None of these children were geniuses but were classified by the teacher as very intelligent and the best in the class. The ages ranged from three to twelve years. Home environment, state of health, physical development, color of hair, general expression, temperament, demeanor, conduct, order and neatness were all taken into account. For testing mental ability, the Binet and Simon scale, Ebbinghaus's combination and memory tests and Bourdin's test for attention were used. As graded by the Binet scale, ten of these pupils were one year, fourteen two years, ten three years and one, four years in advance; six fulfilled the tests for their age but of these, three had already completed their twelfth year and the investigator considers the thirteen year tests as too difficult, a criticism which has been sustained by other observers. Some of the tests were repeated for children of all ages, e. g., naming as many words as possible in three minutes, and description of a picture from memory. The first of these is a test for eleven years and not less than sixty words should be given. Up to the age of eight, the question was not fully understood though some of the children gave as many as sixty words within the time limit. From eight years on, all succeeded in this test but there were differences in the character of the words, and the quality of the associations. The description of a picture from memory brought out interesting differences in types according to the amount of imaginative material introduced.

General conclusions drawn from this study were that there is a correlation between physical environment and development of intelligence. All but 15% of these pupils came from fairly comfortable homes and had at least ordinarily hygienic surroundings.

There is also a correlation between physical and mental development. With but one or two exceptions, all the children studied were of normal physical development, enjoyed fair or excellent health and their conduct was reported good. Memory was excellent in all cases, and not merely mechanical but associative memory. The auditory method of memorizing was used throughout, being necessary for the younger pupils and giving better results with the older ones. None of the intelligent pupils had a poor school record though the advantage derived from the course of instruction was by no means commensurate with the degree of intelligence.

The second paper is a study of the beginning of dream activity, the subjects being 100 children, 58 boys and 42 girls, between three and four years of age, who attended the kindergartens in Rome. These children have a nap during the school period and the method adopted was informal questioning immediately after waking from this. Suggestion was avoided as far as possible and some supplementary evidence was obtained from the teachers as to restlessness, talking in sleep, etc. From the material thus gathered, the authors have drawn the following conclusions: (1) at the age of three, children dream and know that they dream. Nearly a half of the children, forty-five, interrogated related at least one dream. (2) The dream as indicated by expressive movements precedes the consciousness or better the memory of the dream, for these were observed in children who either said that they did not dream or failed to understand what was asked of them. (3) Consciousness of dreaming increases with age, i.e., a child of three and a half remembers more complex dreams than a child of three. (4) Sex seems to have some influence upon the memory of dreams. The girls were more precocious than the boys. (5) Intelligence and vivacity favor dreaming or at least the remembrance of dreams. (6) Environment has an influence upon the content of dreams. This content for children of three years is given by the memory of their most recent sensorial experiences or by sensations experienced during the dream. Emotional dreams are frequent and the dominant emotion in the children studied was fear.

The above investigation was made in 1910. Recently one of the authors, F. Bianchieri has re-examined by the same method thirty-five of the same children, now five years old. The result is published in the *Rivista di Psichologia.* Briefly summarized, the conclusions are as follows: (1) At five years, there is an increase in the percentage of children who remember their dreams. All the children of five years understand what is meant by dreaming even when they positively assert that they never dream. (2) The influence of sex continues to be manifested, the amount of dream activity, in the girls exceeding that of the boys. (3) Mental development and especially that of the imagination is reflected in dreams. (4) The development of dream activity in children between three and five years is well marked as to (a) the number of dreams remembered, (b) as to clearness of expression in the narration of dreams, (c) as to content.

With the development of the intelligence in general and the imagination in particular, the scope of the dream consciousness is greatly enlarged. Very imaginative dreams, colored always by the predominant emotional states were frequent. Children who at the age of three gave as the content of their dreams only simple recent facts, now remember and clearly reproduce in dreams more remote and complex experiences, but sometimes also a simple admonition received at school or home becomes exaggerated in the dream and

transformed into strange and fanciful occurrences. The following dream will serve as an example. "It seemed as if an old man sold figs and said 'sweet figs! sweet figs!' My brothers bought some and it seemed as if there was cholera in the figs. My brothers ate them and they all died." In the dreams of many of these children who came from one of the poorest quarters of the city, there was a tragic element. One child said "I dream when mamma beats me." In the lives of these children, the sordid and painful events were the predominating ones and were reflected in their dreams.

The third of the above noted contributions is of interest because cases of audiomutism or psychic deafness are of rare occurrence and their study presents peculiar difficulties. The subject of the present study was under the author's observation for four years, having been placed by his parents, at the age of nine, in one of Prof. De Sanctis' institutions in Rome. At the time of his entrance, he had numerous facial tics, and his gait was somewhat jerky. His hearing was obtuse but not sufficiently so to account for the complete absence of speech. He could pronounce single syllables. Mental tests showed both poor memory and easily distracted attention. Accurate tests of judgment and reasoning were impossible because of his lack of speech, but there seemed to be no marked degree of intellectual deficiency. He was entirely untaught. At the end of four years' training his tics and other physical abnormalities have disappeared, he has learned to speak and write though he expresses himself chiefly by nouns and a few verbs when he speaks spontaneously. He never spontaneously uses his hearing and shows signs of fatigue whenever compelled to do so. His attention is still poor and his moral sense but slightly developed though he has now acquired a degree of schooling about equal to the second grade.

While studying this case the author had an opportunity to observe for a brief period another case in which hearing was normal but in which there was a marked mental deficiency. The general conclusions from a study of the literature and the two cases observed indicate that while there is probably a serious brain lesion, that amelioration of the condition to a considerable degree is possible by pedagogic methods. THEODATE L. SMITH

A Montessori Mother, by DOROTHY CANFIELD FISHER. New York, Henry Holt & Co., 1912. 238 p.

This book is the result of an American mother's study of the Case dei Bambini in Rome and her application of the principles of Dr. Montessori's system to her own children. Her own experiences have convinced her that these principles are correct even though they have frequently come in conflict with her Puritan ideas and training. The result of such conflict has, however, invariably resulted in a reconstruction of her own views. The book is addressed to mothers and therefore its primary object is the presentation of Montessori principles as tried in an American home and there are many clever hints in regard to practical applications. Though not treating in detail of the Montessori apparatus or its schoolroom applications, the brief and untechnical descriptions and the many suggestions founded on actual experience can not fail to be helpful to teachers as well as mothers. To the value of the content is added the charm of literary style and it would be impossible to find a more truthful and delightful description of a Montessori school than that given by the author. THEODATE L. SMITH

The Montessori System in Theory and Practice: an introduction to the pedagogic methods of Dr. Maria Montessori, by THEODATE L. SMITH. New York and London, Harper and Brothers, 1912. 78 p.

The increasingly wide interest which develops with closer study, in the Montessori educational ideas, ideals and practice, will certainly be deepened and clarified by the reading of their very direct and succinct presentation in this little book by Dr. Smith of Clark University. The account of the practice is based largely on personal observation by the author. A resumé of the essential facts in Dr. Montessori's career, her academic preparation. her early efforts and aims in seeking a scientific basis for pedagogy, is comprehensive and withal compact. There follows a clear presentation of the principles, psychological especially, and ideals which determine largely the method of education formulated and practiced by Dr. Montessori and her co-workers. The succeeding chapters furnish brief accounts of the signal results achieved in such special subjects as writing, reading, number and arithmetic, in discipline and in the physical education of children in the Case dei Bambini. In the chapter on "Results in Practice" there is given a very suggestive description of the extension of the method to a first grade room of the common schools of Rome with a statement of the results obtained by the experiment. In the final chapter Miss Mary Jackson Kennedy reports certain experiments in the adaptation of the system to American conditions in a Kindergarten.

While the book is confessedly introductory to the system of Dr. Montessori, one is still led by the generally careful and critical character of the book to wish that in the chapter on "Application in American Education" the author had continued with a more critical and a fuller estimate of the difficulties the system must meet in its employment in American schools, the deep and important modifications it must receive, and the rather striking resemblances which the Montessori 'principles' exhibit to those that have long been advanced by American educators and in no inconsiderable measure applied in experimental and practice schools other than the so-called Froebelian Kindergartens. Such a comparative study would have lengthened the book very little and added greatly to its usefulness and value. Then, too, although the author sets forth with great clearness the psychological aspects of the "scientific pedagogy," the sociological or 'anthropological' aspects and factors are quite neglected. The important feature of the Montessori theory and experiment is obviously in the "genuine fusion or organized system of these two great modern tendencies, in practice and thought, in order to contribute to the practical progress of the school."

Mothers, teachers and all others interested in the education of children will find in this book a great deal of value both in information and in suggestion. The absence of a short, carefully selected list of books for additional study of the Montessori ideas and their interpretation and application, to which this book forms an excellent introduction, is much to be regretted. At least definite information as to the published translations of Dr. Montessori's books and lectures would add to the value of the book. W. P. S.

Education, the old and the new. School Management, the experience of half a century. By WILLIAM P. HASTINGS. Battle Creek, Michigan, Published by the author, 1912. 299 p.

The frontispiece is a picture of the author at the age of 79 with the legend "Not injured by school work. Reason—the use of systematic physical culture—work on the farm." The book is dedicated "To my Posterity, To my Country and To my God." It is indeed in most respects a voice from the past, although the author has heard of James' "Talks to Teachers," McMurray, de Garmo, and Herbert Spencer and has a light section on apperception. He is also a believer in hiking and has a grandson and granddaughter whose photographs occupy a page each. Both are standing, reading books and so far as the reader can judge, promise to be as eminent and useful as their grandfather. Illustrations show children playing straddle and volley ball, giant stride, Maypole, sand box, kindergarten games and a playground.

School organization and the individual child, by W. H. HOLMES. Worcester, Mass., Davis Press, 1912. 197 p. And Part II, *Subnormal children. The organization of auxiliary or special schools and classes for mentally defective children.* 211 p.

This book is amplified from a thesis for the doctorate in Clark University. The first thing specially notable is that it contains no table of contents so that one is entirely at sea in opening it and it is difficult to find out what it really contains. This will seriously impair the value of the book. Again, the author has divided it into parts, one on the grading and special plans and second, special and auxiliary schools and classes and he has given to these two parts independent paging and an independent index. These two defects make the book singularly impenetrable. On the other hand, the author has brought together here a large volume of matter of the greatest practical importance and has done so at the psychological moment. His charts illustrating the various plans of classification now in vogue in this country and elsewhere and the schemes by which bright and dull pupils are advanced is itself of great value. The author even at the expense perhaps of unity has touched a great many vital points in present day school management, and has treated of auxiliary schools. He has timely words to say about the training of teachers for industrial teaching, about promotion classes for gifted pupils, departmental teaching, manu-mental schools, classes for stammerers and stutterers, the Montessori method. Then, in the part devoted to subnormal children, he treats of these schools first by foreign countries and then characterizes the mode of teaching classes in various cities of this country. He then passes to discussing sessions, programs, mental tests of various kinds, with an appendix giving much of other valuable matter. On the whole, it is a book which every teacher with larger educational interests ought to know.

Principles of educational practice, by PAUL KLAPPER. New York, D. Appleton & Company, 1912. 485 p.

Part first deals with the meaning and function of education. The second considers its physiological adjustment, discussing manual and vocational training, play, gymnastics. Part three discusses its sociological adjustment, the child, the curriculum, its social organization and content. Part four discusses its mental adjustment, the instinc-

tive aspect of the mind, imitation, emulation, interest, effort. Under the intellectual aspect of the mind the author treats perception, apperception, memory, imagination, thought, etc. Then follows a section on the emotional and voluntary aspects. It is a bulky work, but it covers a vast field. With all its pretensions, it may well be doubted whether it really adds any particular knowledge or has a real *raison d'être*.

Pestalozzi's educational writings, edited by J. A. Green and Frances A. Collie. New York, Longmans, Green & Company, 1912. 328 p.

This book was well worth making, although there was a previous one in the field. The success of a work of this kind depends upon the judiciousness of the selections which make up the body of the work and this in general we may approve. It is very helpful to have such a work, although it is singular that there is no reference made to the former work in this field.

The dramatic method of teaching, by Harriet Finlay-Johnson. Boston, Ginn & Company, 1912. 199 p. (Edited by Ellen M. Cyr.)

This is a practical work with some 15 or 20 full page illustrations, characterizing the teaching of history by plays, the adapted, original, Shakesperean and girls' play, literature, geography, arithmetic, composition, nature study, manual work, etc.

An introduction to the study of adolescent education, by Cyril Bruyn Andrews. New York, Rebman Company, 1912. 185 p.

This work deals with the science of education, modern views and ancient dogmas, adult influence in adolescence, morality and sexual perversion in schools, the cures of immorality and sexual pathology, self assertion and discipline, psychological aspect and future ideals. The work is interesting, but more practical than scientific.

Peter Ramus and the educational reformation of the sixteenth century, by Frank Pierrepont Graves. New York, The Macmillan Company, 1912. 226 p.

It is really difficult to understand why Ramus has been so neglected by writers upon the sixteenth century as he was probably the foremost French philosopher of his century and one of the great educators and loftiest characters of the world. This is an attempt to correct this neglect. It contains an interesting account of the times of Ramus, his breach with Aristotle, his career as professor, finally his persecutions and death, and then it presents his system and the spread of his influence and its peculiar affect upon the quadrivium.

Rousseau on education, by R. L. Archer. New York, Longman's Green & Co., 1912. 278 p. (Educational Classics. General editor, Professor J. W. Adamson).

This is a carefully made, interesting and valuable fifth volume in a series entitled "Educational Classics" comprising I, Froebel's Chief Educational Writings; II, Educational Writings of Locke; III, Pestalozzi's Educational Writings; IV, Vives and the Renaissance, Education of Women.

Introduction to experimental education, by ROBERT R. RUSK. New York, Longmans, Green & Co., 1912. 303 p.

This work is confessedly based very largely on Meumann's introduction to experimental pedagogy and valuable material since then has been incorporated not without some emphasis on works done in English, with particular reference to Whipple. As to content, he discusses the standpoint of experimental education, its methods, the development of the child physically and mentally, of the special mental powers of the child, e. g. attention, sense perception, apperception, memory, association, imagination, esthetic and ethical individual difference, the doctrine of endowment, mental work of the child, mental hygiene, psychology and pedagogy of instrumental subjects such as reading, hand writing, orthography and arithmetic. The appearance of such a book is exceedingly timely, but we cannot help being disappointed at several things, first that although the author gives copious references, they are presented in such a way that it seems hardly possible that the author can have read or digested any of those he refers to. Again, his knowledge of literature in general seems to be defective and one sided and in his point of view, he seeks to be too Wundtian. We cannot but believe a second edition will remedy many of these defects.

Two types of rural schools, with some facts showing economic and social conditions, by ERNEST BURNHAM. Teachers College, Columbia University Contributions to Education, No. 51, 1912. 129 p.

The author chose a certain area and describes its natural features with an historical statement. Then he analyzes financial, community and family data. In the next chapter, he takes up the school status, the districts, teachers, pupils, and in the third, passes to constructive enterprises, maintenance, instruction, hygiene.

Admission to college by certificate, by JOSEPH LINDSEY HENDERSON. New York, Teachers College, Columbia University Contributions to Education, No. 50, 1912. 171 p.

After an introductory chapter stating the problem, sources of material, divisions, etc., the author in the second chapter describes the educational conditions in United States about 1870 as an introduction to an account of the origin and evolution of the certificate system. In the fourth chapter, he discusses present day conditions of admission by certificate and here he finds many types, such as the New England college type controlled by inspection, accredited scheme, the Vanderbilt, Harvard, Chicago plan, other distinct types, studies toward a national system. Finally, in the fifth chapter, he gives evaluations and conclusions, largely tables. The work is a valuable one.

Vocational education in Europe, by EDWIN G. COOLEY. Chicago, The Commercial Club of Chicago, 1912. 347 p.

This is the result of about a year's study abroad by the former superintendent of Chicago schools who devoted special attention to German schools. The topics will suggest the scope of the book. There is a general survey of vocational education in Germany; then something on industrial evolution and apprenticeship, an outline of the school system, continuation school, vocational guidance, secondary, technical, building-, machine- art trades schools; then textile, wood workers, higher technical, independent handcraftsman, commercial schools, industrial training for girls, for teachers, agricultural schools.

A report on vocational training in Chicago and in other cities, by a sub-committee of the committee on public education, 1910-1911 of the City Club of Chicago. Chicago, City Club, 1912. 315 p.

This comprehensive and admirable report is divided into four parts. Part I is an introduction, being a general summary with recommendations. Part II describes the industrial education in Chicago and in other cities, with chapters on such subjects as the local needs, conditions in skilled industries, attitude of organized labor, local schools and courses, public and private, comparison with other cities. Part III is devoted to commercial education in Chicago and other cities and Part IV to educational tests given the boys who had left school for work.

The teaching of mathematics in the United Kingdom, being a series of papers prepared for the International Commission on the Teaching of Mathematics. London, Eyre and Spottiswoode, Ltd., 1912. 2 volumes, Part I and Part II. (Board of Education. Special Reports on Educational Subjects, Volume 26 and Volume 27.)

These comprehensive and admirable studies by various experts very carefully chosen deal with mathematics in the public elementary schools, in the preparatory secondary municipal Scotch and other schools of various grades. There are many sections on practical mathematics as taught at different places, on the algebra syllabus, mathematics for girls and women, geometry, calculus, methods of instruction, experimentation, mathematics in technical schools, for foreigners, engineers, Oxford examinations, recent changes, standards for scholarship, training of teachers, etc.

The teaching of mathematics in secondary schools, by ARTHUR SCHULTZE. New York, The Macmillan Company, 1912. 370 p.

For six years the author has given a yearly course of lectures in New York University on the teaching of mathematics in the secondary school with the idea of making the teaching in this field less formal and more disciplinary. The author seeks to train students in attacking mathematical problems instead of making them learn merely mathematical facts. He first discusses the causes of the present inefficiency of teaching in this field, then the value of the subject, methods, first propositions in geometry, original exercises, equality of triangles, parallel lines, circle limits, third book, regular polygons, solid geometry, applied problems, curriculum in algebra, typical parts of it, trigonometry.

Die Karikatur und Satire in der Medizin, von EUGEN HOLLÄNDER. Stuttgart, Ferdinand Enke, 1905. 354 p. 223 cuts.

This stately volume is richly illustrated in colors and treats of satire in the Reformation and post-Reformation time and particularly caricatures related to different diseases, gout, infectious troubles, nervous diseases, pregnancy and then takes up the physician as a man and as a member of his profession. Then there is a large group of satires about fleas. Animal magnetism too and parasites play an important rôle. On the whole, this seems an important contribution to the psychology of its subject.

Die Frau in der Karikatur, von EDUARD FUCHS. München, Albert Langen, 1907. 487 p.

This work has 426 illustrations and 60 inserts, some of them unfortunately not very proper. The first part treats of what is entitled the battle for pants. Then follows the Minotaur and her daughters, under which topic come coquetry, flirtation, prudery. Then he treats of fashion and its absurdities and the female body in fact and in portrait. The second part is devoted to women's occupations and industries, including house duties, care of children and social life.

Germany in the nineteenth century. With an introductory note by VISCOUNT HALDANE. Manchester, University Press, 1912. 142 p.

In this volume, several experts have presented their conceptions of modern Germany; J. H. Rose in political history, C. H. Herford in intellectual and literary history, E. C. K. Gonner in economic and M. E. Sadler in the history of education. Nearly all these are very eulogistic.

Correlations of mental abilities, by BENJAMIN R. SIMPSON. New York, Teachers College, Columbia University Contributions to Education, No. 58, 1912. 122 p.

The author first states the general methods of investigation such as abilities, tests used, subjects, then passes to details, the scoring of results, practicability of the measures secured by use of the tests, significance of the tests, and analysis of the general intelligence as shown by them between the good and the poor groups (here tests are given for collective thinking, memory, association, perception, motor control, discrimination of length). Finally, a comparison of results is given with those of other investigators.

Der Alptraum in seiner Beziehung zu gewissen Formen des mittelalterlichen Aberglaubens, von ERNEST JONES. Deutsch von E. H. Sachs. Leipzig, Franz Deuticke, 1912. 149 p. (Schriften zur angewandten Seelenkunde, hrsg. von Sigm. Freud. Vierzehntes Heft).

Ernest Jones is probably to-day America's most acute, informed and faithful disciple of Freud and this is his most important work which is well worthy of the honor of a German translation which is here given it.

Elementary entomology, by E. DWIGHT SANDERSON and C. F. JACKSON. Boston, Ginn & Co., 1912. 372 p.

The demand for elementary entomology has increased in recent years and this book seeks to be a text for beginners. It is confessedly in large part a compilation. Many will regret that the original intention of the authors to include several chapters on pests as affecting crops and domestic animals was not carried out. However, we may be thankful that the economic side has been made a dominant note in that the forms studied are of economic importance. Many will regret also that the authors do not believe that even young agricultural students should be introduced to the study of common injurious insects. The outline of life histories is important. The work is illustrated by 496 cuts.

Light on life's difficulties, by JAMES ALLEN. New York, Thomas Y. Crowell Company, 1912. 137 p.

The chapters are light on various things, e. g. cause and effect, spirit and matter, proportion, principle, sacrifice of self, management of the blind, light on the way of wisdom, disposition, liberty, creeds and miracles, sorrow, change.

Crossing the centuries. Published under the direction of the Educational Associates, Springfield, Mass., 1912. 183 p. (Edited by William C. King.)

This is a very elaborate apparently subscription book enterprise designed for use by students of history. Nearly every page is devoted to tabulation with many colored charts, figures, etc., showing the course of history.

Natursagen, von OSKAR DÄHNHARDT. Leipzig, Teubner, 1912. Bd. 4, Zweite Theil, Tiersagen. 322 p.

This second part of the fourth volume of the series on nature myths is devoted entirely to animal tales and the material is wrought up with characteristic thoroughness and system. The chapters are: the ape and the tortoise, the animal groups in the various countries, the race between the hare and the tortoise, the various help each receives, the enmity between the dog and the cat, the cat and the mouse, the fox stories, and last, other stories of other animals.

Indian sketches. Père Marquette and the last of the Pottawatomie chiefs. By CORNELIA STEKETEE HULST. New York, Longmans, Green & Co., 1912. 113 p.

This is another book of an interesting series which the author has been evolving in recent years.

South American observations and impressions, by JAMES BRYCE. New York, The Macmillan Company, 1912. 611 p.

This book records observations made and impressions formed during a journey through western and southern South America from Panama to Argentina and Brazil via the Straits of Magellan. Such a book by a man so competent and able cannot fail to be of the greatest value, specially in view of the new movements likely to originate from the opening of the Panama Canal.

Toys and toymaking, by GEORGE F. JOHNSON. New York, Longmans, Green & Company, 1912. 160 p.

This book is an account of how to make 152 objects with copious illustrations on every other page. Why these objects are called toys, however, it is difficult if not impossible to understand. The garden hoe, rake, ladder, clothes post, sign post, flag, mop, notice board, signal, broom, gate, trowel, pick, etc., are the objects. True, children could play with many of these things, but in the *frei und fröhlich* sense none of them are toys at all and that is why we deem the title of the work essentially misleading, though of course not intelligently so.

Story-telling in school and home, by EMELYN NEWCOMB PARTRIDGE and GEORGE EVERETT PARTRIDGE. New York, Sturgis & Walton, 1912. 323 p.

This book was written to help mature story tellers, of whom there are an increasing number in the week day and Sunday schools, libraries, playgrounds, and homes. The first part of 150 pages deals with the art of story telling, treating such themes as the world's stories, how to tell a story, primitive stories, myths, fairy tales, epics, historical stories, fables, the story and the child, its relations to nature, history, morals, religion, the festival, etc., while the latter part of the book consists of about twenty retold stories with eight full page illustrations. The book is interesting and valuable and really a new contribution to the subject.

The children's hour. Selected and arranged by Eva March Tappan. New York, Houghton, Mifflin Company, 1907. 10 volumes.

Miss Tappan has made in these ten volumes one of the most interesting collections of stories for children, comprising folk stories and fables, myths from many lands, stories from the classics, legendary heroes, seven old favorites, stories and poems, out-of-door adventures and achievements, poems and rhymes, modern stories. All things considered, both in the content, in the wisdom of selection, in the illustrations and in the type, this series must be called one of the best of its class.

The soul and sex in education, by JIRAH D. BUCK. Cincinnati, Stewart & Kidd Company, 1912. 175 p.

This work consists of four chapters, viz. an aerial excursion, the nature of inspiration and revelation, interpretations of scientific psychology, adolescence in relation to religious education and lastly, love, marriage, celibacy and divorce.

Ernährung und Nahrungsmittel, von H. BISCHOFF. Leipzig, G. J. Göschen, 1910. 120 p.

This is a condensed but practical handbook in two parts, the first being nutrition, and the second, the individual nutritive substances.

The revised English grammar, by ALFRED S. WEST. Cambridge, University Press, 1912. 336 p.

This book contains the elements of English grammar, but does not profess to be a complete manual of the English language. It is addressed to boys and girls from 13 to 17. The author reflects that since "of every hundred boys and girls now learning English grammar probably not more than one will ever read a page of any English author who wrote before the age of Elizabeth, it seems needlessly cruel to the remaining ninety-and-nine to inflict upon them the exhaustive study of historical English accidence."

Die ungenügende Ausdrucksfähigkeit der Studierenden. Das Persönliche im akademischen Unterricht und die unverhältnismassige Frequenz unserer Universitäten. Zwei Vorträge. Von ERNST BERNHEIM. Leipzig, Ernst Wiegandt, 1912. 74 p.

This work grapples in a rather effective way with the insufficient power of expression of students which has long been recognized by teachers. The deficiency is grammatical and logical and apparently

universal in all lands and all grades, from kindergarten to university. The author describes a method which he has developed by which he thinks this evil can be mitigated.

The child in the city. A series of papers presented at the Conferences held during the Chicago Child Welfare Exhibit. Published by the Department of Social Investigation, Chicago School of Civics and Philanthropy, 1912. 502 p.

These papers which are opened by introductory remarks by Cyrus McCormick, Jane Addams and Judge Mack are grouped first under those of personal service; second, physical care; third, the school and the child; fourth, special groups of children, the working child, law and the child, libraries and museums, social and civic problems and the uncompleted task. They constitute together a valuable addition to the subject which they treat.

Die öffentliche Fürsorge für die sittlich gefährdete und die gewerblichtätige Jugend, von JOHANNES PETERSEN. Leipzig, B. G. Teubner, 1907. 136 p. (Aus Natur und Geisteswelt.)

Die öffentliche Fürsorge für die hilfsbedürftige Jugend, von JOHANNES PETERSEN. Leipzig, B. G. Teubner, 1907. 131 p. (Aus Natur und Geisteswelt.)

These little volumes contain an excellent outline of its large subject from a German point of view, with copious literature. The chief topics are children as wards, the fight against infant mortality, care for parentless children, criminality, and the public care of children who have just left school.

Health and happiness, by ELIZA M. MOSHER. New York, Funk & Wagnalls Co., 1912. 203 p.

Miss Mosher has been for many years profoundly interested in the subject of which this book treats. It will be a great satisfaction to her friends that in this volume, which consists of a series of twelve letters dated from different places, she has set forth her conceptions of the kind of education girls ought to receive, particularly in matters that pertain to their own health. The work, as we understand it, sums up the studies of a life time and such books, if written by serious and earnest workers are worthy of very grave consideration by all interested in the subject of which they treat. The twelve chapters describe in a simple and interesting way the general structure of the body, the importance of correct postures, food, impure air, care of the skin, hair and nails, proper clothing, relation of mind to body, and the development of life.

Womanhood and its development, by LUELLA Z. RUMMEL. Kansas City, Mo., Burton Pub. Co., 1912. 221 p.

The chapters are origin of life and reproduction, anatomy, physiology, adolescence in the female, hygiene of puberty, of menstruation, general hygiene, exercise, rest, mind, food, diet, sexual sense, courtship, solitary vice, social inequalities, development in the ovum. The book contains only a very few illustrations. The author is a professor of hygiene in Hahnemann Medical College in Kansas.

The care of the body, by R. S. WOODWORTH. New York, The Macmillan Company, 1912. 359 p.

The author treats the science of health, blood, circulation, controlled food, digestion, diet, bodily heat, muscles, brain, ear, eye, work, rest, indulgences, the cycle of life, disease.

Race improvement or eugenics, by La Reine Helen Baker. New York, Dodd, Mead & Company, 1912. 137 p.

The chapters are: heredity, environment; the child, its heritage; marriage; possibilities of race improvement; education, eugenics; eugenics, the modern feminist movement; positive, negative eugenics; state endowment of motherhood; sterilization in the United States. This booklet is the most condensed and interesting summary of the subject of its size in English up to date.

Mind cure and other essays, by Phillip Zenner. Cincinnati, Stewart & Kidd Company, 1912. 157 p.

This volume is devoted largely to teaching people in matters of health.

British and American eloquence, by Robert Irving Fulton and Thomas Clarkson Trueblood. Boston, Ginn & Company, 1912. 403 p.

A cyclopedia of education, edited by Paul Monroe. New York, The Macmillan Company, 1912. 682 p. (Gal-Lib.)

This volume seems to be well up to the level of its predecessors.

The mission of Victoria Wilhelmina, by Jeanne Bartholow Magoun. New York, B. W. Huebsch, 1912. 146 p.

Le cid, par Pierre Corneille. Edited by Colbert Searles. Boston, Ginn & Co., 1912. 178 p.

La jeune Sibérienne, par Xavier De Maistre. Boston, Ginn & Co., 1912. 138 p.

Heimatlos, von Johanna Spyri. Tr. by Emma Stelter Hopkins. Boston, Ginn & Co., 1912. 231 p.

A textbook of physics, edited by A. Wilmer Duff. Third revised edition. Philadelphia, P. Blakiston's Son & Co., 1912. 686 p. 595 illustrations.

An elementary Spanish reader, by E. S. Harrison. Boston, Ginn & Co., 1912. 79 p.

A first year Latin book, by John Thompson. Cambridge, University Press, 1912. 227 p.

The ballad in literature, by T. F. Henderson. New York, G. P. Putnam's Sons, 1912. 128 p.

An anthology of English prose (1332-1740), by Annie Barnett & Lucy Dale. With a preface by Andrew Lang. New York, Longmans, Green & Co., 1912. 247 p.

Two years' course in English composition, by Charles Lane Hanson. Boston, Ginn & Company, 1912. 377 p.

The little kingdom first reader, by Nettie Alice Sawyer. New York, Rand, McNally & Company, 1912. 144 p. (ill.)

The little kingdom primer, by NETTIE ALICE SAWYER. New York, Rand, McNally & Company, 1912. 128 p. (ill.)

No mummified history in New York schools, by ANDREW SLOAN DRAPER. Syracuse, N. Y., C. W. Bardeen, 1912. 32 p.

Work and play with numbers, by GEORGE WENTWORTH and DAVID EUGENE SMITH. Boston, Ginn & Company, 1912. 144 p.

Plane geometry, by WILLIAM BETZ and HARRISON E. WEBB. Boston, Ginn & Company, 1912. 332 p.

Fine and industrial arts in elementary schools, by WALTER SARGENT. Boston, Ginn & Company, 1912. 132 p.

Goethe and the twentieth century, by J. G. ROBERTSON. New York, G. P. Putnam's Sons, 1912. 155 p.

Proceedings of the American Antiquarian Society, 1812-1849. Published by the Society, Worcester, Mass., 1912. 582 p.

Willie Wyld, his wonderful voyage to the island of Zanzibar, by WILLIAM JAMES MORRISON. Nashville, Tenn., Smith & Lamar, 1911. 128 p.

The yellow streak and other stories about schools, by C. W. BARDEEN. Syracuse, N. Y., C. W. Bardeen, 1912. 255 p.

COMMUNICATION

PICTURES OF PSYCHOLOGISTS

It has been made evident to me that a number of men interested in Psychology, Philosophy, Science and Education would be glad to secure pictures of leading men in their line. The following plan is proposed: To have some one secure unmounted photographs of all persons whose pictures are asked for and have photographic plates, eight by ten, made from which photographs may be printed and sold as ordered. The price would be made uniform although the cost where only a few photographs were made from a plate would be greater than in the case where there were many ordered. The idea is not to make a "Hall of Fame" set of pictures but merely to arrange a medium through which photographs of eminent men may be secured. I should be glad to receive suggestions regarding this plan and also names of men whose photographs are desired from all who are interested and will then try to make satisfactory arrangements.

E. A. KIRKPATRICK, Fitchburg, Mass.

STATE LAWS REGULATING MARRIAGE OF THE UNFIT

(From the Annual Report of the National League for the Protection of the Family. Rev. Samuel M. Dike, Sec.)

No Regulation by Statute

Thirteen States and Territories make no regulation by statute. These are Alabama, Arizona, Colorado, Florida, Indian Territory, Louisiana, Maryland, Missouri, New Mexico, Pennsylvania, South Dakota, Tennessee, and Texas. But some of these states secure the aims of these restrictive measures through provisions in their divorce laws.

Summary by Causes

Insanity, Lunacy, and Want of Understanding or Will to Consent.—Thirty-four States or jurisdictions make restrictions under some one of these terms: Arkansas, New York, North Carolina and Oregon—Oregon using the last of the three terms given above. The other States are: California, Delaware, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, New Jersey, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

The Imbecile and Feeble-minded.—Eight States specify the imbecile or feeble-minded as follows: Connecticut, Indiana, Kansas, Michigan, Minnesota, New Jersey, Ohio and Washington.

Idiotic.—Fifteen States and the District of Columbia specify the idiotic as follows: District of Columbia, Illinois, Iowa, Maine, Massachusetts, Michigan, Mississippi (providing divorce in such cases), Nebraska, Oklahoma, Rhode Island, South Carolina, Utah, Vermont, Washington, Wisconsin and Wyoming.

Incapable of Consent.—Four States put a restriction in this form: Arkansas, New York, North Carolina and Oregon.

Epilepsy.—Nine States specify epilepsy. They are Connecticut, Indiana, Kansas, Michigan, Minnesota, New Jersey, Ohio, Utah and Washington.

Drunkenness is named in the statutes of only two States as a bar to marriage. Ohio specifies habitual drunkenness and Washington the common drunkard.

Venereal and other contagious diseases are a bar to marriage in four States. Indiana names only a transmissible disease, and Michigan, by an act of 1899, and Utah and Washington, by acts of 1909, specify venereal diseases as a bar to marriage.

The Indigent.—One State, Indiana, regulates with considerable care the marriage of the indigent.

NOTES

As the suggestion is frequently made that the marriage of those afflicted with venereal disease should be legally regulated, inquiry has been made into the working of the law on the subject in Michigan, the only State that has had the law long enough to fairly test it. The testimony of leading men interested in checking these diseases is that the law has no practical value. It is easy to see why such a law must be, to a great extent, a failure, and that our hope must rest on the influence of education in various ways, and on the direct action of the parties to be married, their parents, pastors and physicians. The evils are of a grave character, both on account of their wide prevalence and their most serious effects on the parties immediately concerned and their descendants. But their legal prevention is difficult.—From *The Training School,* February, 1912, Vol. VIII, No. 10, Whole Number 92, pp. 153-4.

The May issue of the *Association Seminar* contains an admirable report by Dr. Thomas M. Balliet regarding the religious instruction at the International Young Men's Christian Association College at Springfield which all friends of that institution and indeed of religious education should read. There has been for years a persistent effort to discredit the work of this institution chiefly by the very conservative officers of the Y. M. C. A. because they accept the results of modern biblical scholarship and seek to square their teachings with modern science and religious thought. They believe this has given their work added power and increased the desire for and the efficiency of the great service its graduates render. In the humble opinion of the writer of this note, it is nothing less than scandalous in this little conservative wing of the Y. M. C. A. to strive to keep graduates of this institution from securing appointments in Association work and to indulge in petty criticisms. The institution has the endorsement of a very large number of the leading men in this work in the country and has been growing steadily, the last year having been its best, with 193 students enrolled and 35 graduated in June. A fund of $63,000 for a new library has been completed and $40,000 has been received for other purposes.

Aus Nah und Fern.—This little periodical is published by the Francis W. Parker School Press in the interests of students of German. It is especially adapted to the needs of those in second and third year classes. It gives in brief idiomatic form a record of current events, especially in the German world and is excellently adapted to arouse the interests of pupils. It furnishes supplementary reading in a form well calculated to prove an incentive to pupils and to increase their vocabulary, while at the same time bringing them into closer relation with things German.

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